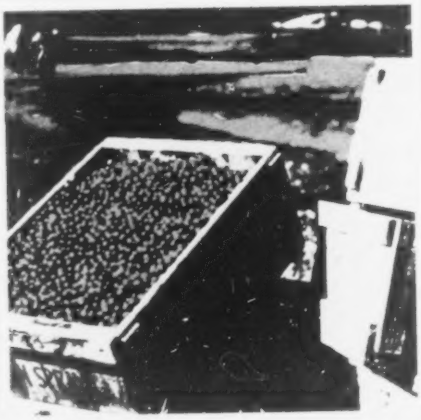
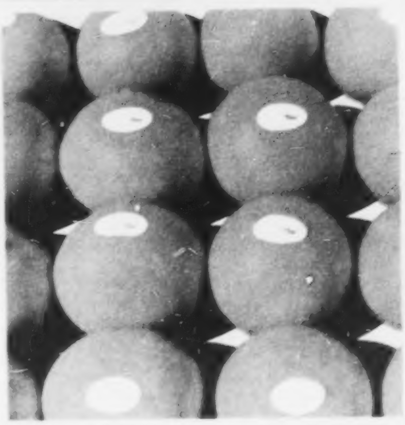
MASSACHUSETTS AGRICULTURE 1986

diversity and innovation





ANNUAL REPORT

Massachusetts Department of Food and Agriculture

1986

A MESSAGE FROM
ENVIRONMENTAL AFFAIRS SECRETARY JAMES S. HOYTE

Massachusetts farmers: our hands-on environmentalists

Dear Friends:

Within the whole scope of natural resource management and environmental protection in Massachusetts, there are few who play as vital a role in that effort as the farmers who till our soils, plant the seeds and keep thousands of acres of open farmland in active production.

In a very real sense, the farmers of this Commonwealth are hands-on environmentalists. They know the land. They love the land. They depend on the land for their day-to-day livelihoods. It is that close relationship between farmer and earth which makes agriculture such an integral part of our environmental agenda.

An excellent case in point is our Agricultural Preservation Restriction (APR) program. Since the inception of that program during Governor Dukakis' first term, some 20,000 acres of Massachusetts farmland have been spared from development. We actually have about 1,000 more working farms in the Commonwealth today than we did a decade ago. We look forward to continuing that trend with the help of the APR program.

Our farmers also are making great progress in the reduction of pesticide use. Through Integrated Pest Management (IPM) and other chemical-reduction methods, we expect to reduce the use of the most toxic pesticides in Massachusetts by 50 percent by 1995. We simply must keep a tighter lid on these chemicals.

It's all part of the environmental awareness which characterizes the Massachusetts farmer. As the stewards of the soil, farmers understand from firsthand experience the need to respect and protect our environment. After all, it's the only one we have.

In that spirit, I join Governor Dukakis and Commissioner Gus Schumacher in expressing a deep commitment to the continued support of agriculture in Massachusetts.

Sincerely,

James Hoyte

JAMES S. HOYTE
Secretary

A MESSAGE FROM
COMMISSIONER AUGUST SCHUMACHER, JR.

the sun also rises: a new era of agriculture in Massachusetts

Dear Friends of Massachusetts Agriculture:

Looking back at our proud and productive agricultural history in Massachusetts, we have every reason to look forward to the many new challenges and opportunities in store for us.

Clearly, Massachusetts farmers have the ingenuity and the inner drive to build a sustainable farm-and-food system for the 21st century. It is a system which fosters diversity and innovation for the future, while recognizing the importance of preserving our agricultural heritage.

That marriage of traditional and not-so-traditional agriculture has been a successful one. As farmers elsewhere continue their struggle to stay afloat, some Massachusetts farmers are experiencing a modest comeback. And I stress the word modest. A lot more work needs to be done before we can breathe easily.

But we're making significant progress. Today's consumers want food that is closer, fresher and safer. They're demanding an unprecedented diversity of local, high-quality, low-chemical food. The Massachusetts farmers, grower cooperatives and food processors who recognize those demands and who respond quickly to them will lead the way into the next century.

Toward that end, the Department of Food and Agriculture will devote the remainder of this century to laying the foundation for 21st century agriculture in Massachusetts. We will strengthen the links between the key components of our food system - farmers, processors, distributors, wholesalers, retailers, hotel-restaurant operators, consumers, business investors and others.

Together with you, we look forward to accepting the great challenges of the future.

Sincerely,

August Schumacher Jr

AUGUST SCHUMACHER JR.
Commissioner

TABLE OF CONTENTS

section I

Annual Report

DIVISION REPORTS

Division of Agricultural Development........................8
Bureau of Markets........................8
Foreign Trade Report........................10
Bureau of Land Use........................12
Public Information Office........................16
Division of Regulatory Services........................17
Pesticide Bureau........................19
Bureau of Dairying........................22
Bureau of Farm Products........................27
Bureau of Milk Marketing........................31
Bureau of Plant Pest Control........................33
Division of Animal Health........................35
Riding Academy Report........................40
Division of Equine Programs........................42
Thoroughbred Breeding Program........................42
Standardbred Breeding Program........................44
Division of Fairs........................46

SPECIAL FEATURES

Saving Massachusetts Farmland........................48
Integrated Pest Management........................50
The Fresh Connection........................52
Special Events photo section........................54
Statistical Highlights........................62

section II

Massachusetts Agricultural Statistics

LIVESTOCK

Highlights........................69
Cattle and Calves........................70
Hogs and Pigs........................72
Sheep and Lambs........................74
Wool........................75
Mink........................75

DAIRY

Highlights....76
Quarterly Milk Production....77
Annual Milk Disposition and Monthly Price....78
Manufactured Dairy....79

POULTRY

Highlights....80
Chickens....81
Eggs....81
Turkeys....82
Hatch....83

CROPS

Highlights....84
Corn for Silage....85
Hay....86
Tobacco....87

FRUITS AND VEGETABLES

Highlights....88
Cranberries....89
Apples....89
Peaches....89
Potatoes....90
Tomatoes....90
Sweet Corn....90

MISCELLANEOUS

Maple....91
Prices Paid....92
Farm Production Expenditures - Northeast....94
Farm Balance Sheet....96
Farm Production Expenses....96
Gross Farm Income....96
Massachusetts Production Rank Among States....97
Number of Farms....97
Per Capita Consumption....98
Cash Receipts....99

MASSACHUSETTS DEPARTMENT OF FOOD AND AGRICULTURE

staff

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We would like to extend our best wishes to John Fitzgerald and Harvey Smith who have recently retired.

Massachusetts Agriculture 1986 was produced by the Public Information staff: Christopher R. Phillips - coordination, writing, and editing; Diane J. Baedeker - graphic design and production, photography; Janet M. Christensen - supervision of editing and production.

Special thanks are extended to all Department staff who gave their aid and cooperation in this project.

BUREAU OF MARKETS

Guy L. Paris, Chief

Fueled by some powerful ideas and equally strong objectives, the Bureau of Markets made much progress in FY 1986 toward promoting Massachusetts food products in the state, regional, national and international marketplaces.

A creative, aggressive marketing program is a vital component of any successful industry. In the case of food and agricultural marketing, the challenges are as diverse as the products we sell.

During the past fiscal year, the Bureau of Markets stimulated sales in a growing network of direct-marketing outlets - more than 800 roadside stands, more than 50 farmers' markets and dozens of pick-your-own operations. We also assisted growers in the direct marketing of their products to wholesalers, retail supermarkets, restaurants and other large-quantity buyers.

Through it all, our key objective has been to promote strong, lasting relationships between buyers and sellers.

We devoted much of our efforts, too, to opening up new channels of trade in foreign markets, such as the Caribbean, Europe and the Pacific Rim countries. The Foreign Trade section of the Bureau spearheaded that effort.

The leaders of all three sections of the Bureau - Foreign Trade, Farmers' Markets and Roadside Stands - worked with the Bureau Chief to meet these objectives.

In addition to assisting the farm-and-food industry, the Bureau also is responsible for handling the Department's own promotional and advertising activities. With the assistance of the Public Information Officer and others, the Bureau supervises special events, the publication of news releases, brochures and other promotional materials.

The Bureau also assists some 22 commodity associations in Massachusetts in their promotional efforts. A promotional account established under Commissioner Nathan Chandler in 1971 is earmarked for that purpose. From the $40,000 allocated to that account the first year, nearly $247,000 was provided in the FY '86 budget for agricultural promotion.

A commodity cost-sharing program has been developed which allows commodity groups to apply for matching funds for various projects. The Bureau maintains complete records of funds allocated and monitors the projects undertaken by each commodity group.

The state's commodity associations assisted the Bureau in sponsoring a number of special events during FY '86 and the 1986 calendar year. Some of the highlights:

-- A luncheon marking the annual visit by the Governor and his Cabinet to Western Massachusetts.

-- A special exhibit featuring commodity associations at the Eastern States Exposition in West Springfield.

-- An appreciation and awards dinner for buyers of Massachusetts agricultural products at the Charles Hotel in Cambridge.

-- A "Taste of Massachusetts" Reception at the preview party of the New England Flower Show.

-- A reception at the State House for "Legislative Appreciation Day." Lawmakers received baskets of Massachusetts products provided by the commodity groups and assembled by the Future Farmers of America from the Norfolk County Agricultural School.

-- A promotional program featuring Massachusetts-grown food at Purity Supreme supermarkets, Donelan's Red and White stores and other retail food outlets.

-- A booth promoting Massachusetts wines and cheeses at the Massachusetts Restaurant Show.

-- An apple pie contest at the Faneuil Hall Marketplace in Boston.

Overall, the Bureau was pleased that it was able to successfully carry out those and other promotional programs during FY '86 and the 1986 calendar year.

As we look to the future of agri-marketing in Massachusetts, we are confident that, with the help of financial loan and grant programs, we will continue to assist farmers in their business pursuits.

We will work to develop new prospects for specialty and non-specialty items.

We will continue to make new inroads in the marketing of all types of wholesale and retail agricultural products.

We will establish new markets for such unique products as compost fertilizer, educating the public as to the benefits of using natural fertilizers.

We will assist the state's dairy industry in dealing with the pressures and changes it has been experiencing over the past several years. We will help them strengthen existing marketing programs and diversify into new areas of marketing and product development.

Through our creativity, resourcefulness and persistence, we will maintain our reputation as a strong competitor in the farm-and-food marketplace.

FOREIGN TRADE REPORT

Dr. Schiva Gandhi

The Food Security Act of 1985, with its lower price supports and export enhancement programs, renewed optimism that U.S. agricultural exports will increase. This optimism was nurtured further by the recent depreciation in the value of the U.S. dollar. Still, U.S. agricultural trade experienced a deficit for five months in 1986, ending up with a modest surplus.

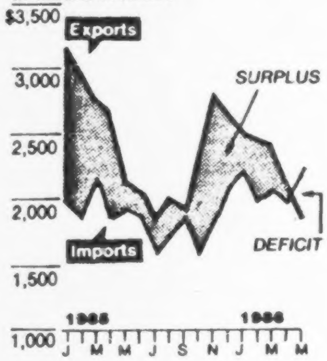
The dollar indeed has declined in value against most European currencies and the Japanese yen. Between March 1, 1985 and March 1, 1986, the real value of the U.S. dollar, when adjusted for differences in consumer prices, dropped 50, 46, and 41 percent against the French franc, the German mark and the Japanese yen respectively. But the value of the U.S. dollar has not declined significantly, if at all, against the currencies of our non-European agricultural competitors.

Much of the potential benefit of the lower dollar is being offset by weak growth abroad. This weakness, in turn, has sparked fears among our major trading partners that any further decline in the U.S. dollar will damage their exports.

In this current global setting, innovative marketing is more important than ever. To this end, the Foreign Trade section has assisted a number of Massachusetts agribusiness firms in redefining their marketing strategies and in the introduction of their product(s) to potential world markets. A manufacturer, who has a quality product and a definite interest in market expansion is encouraged to introduce this product in those foreign markets where a market demand exists. Furthermore the Foreign Trade Section provides Massachusetts exporters with timely reliable information on emerging world markets, changing consumer preferences, needs of foreign buyers, patterns of trade and the supply and demand situation around the world, so that they can make sound business decisions.

A Reversal In Agricultural Trade

In millions of dollars



The Foreign Trade Section also encourages foreign buying teams to visit Massachusetts, and hosts meetings between them and officials of the Massachusetts agribusiness firms.

There are many small-to-medium sized Massachusetts agribusiness firms in value added products and their export potential is very large. Yet these firms shy away from exporting because of their limited resources and their unfamiliarity with international marketing.

TRADE SHOWS

Massachusetts agribusiness firms are encouraged to participate in Foreign Trade Shows, because they are one of the best avenues to penetrate prime growth regions, introduce the world to a brand new product, expand their sales in established markets and to establish joint ventures and new business agreements. Increasing numbers of Massachusetts firms are incorporating these shows into their marketing plan, and have participated in a variety of International Trade Shows e.g. ANUGA, Cologne; MEFEX, Bahrain; SIAL, France. The business executives are finding that there is no substitute for face-to-face contact, and the show offers them a cost effective opportunity to meet their market up close and in person. They find that although the actual show usually lasts only a few days, the pay off is in long range contacts. Contacts usually translate into more contacts and more sales.

The program committee meetings of EUSAFEC (an organization formed by the 10 Northeastern State Departments of Agriculture to promote the exports of food and other agricultural products) are regularly attended by the Foreign Trade Specialist, throughout the year. In July EUSAFEC hosted a buying team, which represented a West German department store chain called Kaufhof. This is a major organization with more than 100 stores in West Germany. Fourteen companies from the EUSAFEC region (4 MA, 3 CN, 3 NY, 2 PA, 1 NJ, 1 VT) exhibited their products and gave a presentation on an appointment basis to the members of the Kaufhof buying team. Products from all 4 of the Massachusetts companies were chosen by the Kaufhof team, and sample trial orders were issued to these companies. After closer examination of ingredients, landed prices etc., a decision will be made regarding larger firm orders, for their in-store promotion of U.S. food products, in 80 Kaufhof stores, in February 1987.

In the last few years the Foreign Trade Section has been working closely with Massachusetts agribusiness firms to help them launch an aggressive international marketing program for their current regions of export and/or new global areas geared to their product(s). This approach appears to have been effective for despite the adverse effects of the strong dollar and a background of worldwide protectionism, agricultural exports have been climbing, and in 1985 Massachusetts had over $103 million in direct exports.

BUREAU OF LAND USE

James Alicata, Chief

The main objectives of the Bureau of Land Use are the protection of both privately and state-owned agricultural land and the wise use of our public land resources for farming and gardening. The past year was a productive one for the Bureau of Land Use. Positive steps were taken to ensure continued agricultural use of our state lands and a record number of gardeners are involved in our community gardening effort.

The Bureau is responsible for providing assistance through its programs to both rural and urban agricultural interests. With the growing interest in open space protection and rising real estate values, it has become more difficult to address the competing demands on our agricultural resources.

During the past year, there has been a change in the direction of the Bureau's programs. The full time agricultural producers have been given priority attention in helping meet their need for available land resources. The Dairy Buyout Program and the strong competition from developers for prime farmland, have challenged the land use programs to become more attractive to commercial producers.

Due to the increase of applications received in the **APR Program** and the limited amount of funds available, many innovative techniques were implemented to achieve the effectiveness it reached in 1986. Concepts such as compatible sub-divisions, bargain sales, and cooperative arrangements with Land Trusts were employed to reduce the cost of the development rights to the Commonwealth, and yet deliver the fair market value to the farmer.

The Farmland Inventory Program has heard the concerns of local farmers who were interested in leasing state farmland, but wanted to protect their investment in improving the land crop rotation. The leases are now available on an annual basis and five year term for those who would be interested in a crop rotation program.

Through the use of the **Municipal Farmland Identification Program,** information on available farmland will be mapped and on record. It will provide both the communities and farmers with an inventory on the possible crop production of an area, and assist in planning decisions.

The **Fruition and the Community Gardening programs** are excellent examples of the growing interest in urban and suburban agriculture. Several communities have expressed interest in starting a program. These programs help cement the bond appreciation and understanding of Massachusetts agriculture that is presently shared throughout the Commonwealth.

The efforts and accomplishments that have been achieved through land use programs during 1986 have generated support and encouragement to the agricultural community to expand and thrive in the future.

AGRICULTURAL PRESERVATION RESTRICTION PROGRAM

The Agricultural Preservation Restriction (APR) Program was established by the Legislature in December, 1977, to protect the Commonwealth's rapidly diminishing farmland resources through the purchase of Agricultural Preservation Restrictions, commonly known as development rights. It is a voluntary program whereby farmland owners apply to the Department of Food and Agriculture to sell a restriction on all or a portion of their property. After field inspections, a screening and selection process, appraisals, and approval by the Agricultural Lands Preservation Committee, the Commonwealth acquires these deed restrictions, which run in perpetuity, and prohibit all activities that would destroy or impair the land for farming. Title to the land still rests with the landowner who enjoys all the traditional rights of the property ownership, such as the right to privacy, the right to lease or sell the land, and of course the right to farm the land.

Since the program's inception, more than 16,000 acres have been protected statewide, with an additional 3,600 acres currently under appraisal. During the past six years the Legislature appropriated five million dollars for each of the first four years, twenty million dollars in 1983, and another five million in 1984 for a total of $45 million to fund the program. The Massachusetts program is the most intensive farmland preservation program of all similar farmland protection techniques.

While the goal of preserving 50 farms a year has not yet been reached we have made good progress in 1986 toward reaching that goal.

An active farmland preservation role by the Department of Food and Agriculture came none-too-soon for Massachusetts, as over a million and a half acres of land in farms have gone out of production in the state since World War II. During the two decades between 1951 and 1971 it has been estimated that between 11,000 and 12,000 acres of farmland were lost annually in the state because of urban conversion. The tremendous loss of farmland in Massachusetts has slowed during the past decade, but the loss of farms and farmland continues. One has only to drive around the countryside to witness new houses going up in fields and orchards that were recently active agricultural production.

The loss of agricultural land in most areas of Massachusetts undoubtedly will continue, because the value for agricultural purposes. The economic incentive to sell the farm for non-agricultural uses is often too tempting for a farmer to resist, or the land is simply just too expensive for the farmer to maintain, or the land is just too expensive for the farmer's children or neighboring farmers to purchase. It is this disparity in land value for development versus agriculture that makes the Commonwealth's Agricultural Preservation Restriction (APR) Program work.

STATUS OF FARMS PROTECTED

All of the farms that are currently in the APR program are checked from time to time for compliance with the terms of the Preservation Restriction. At this time, none of the farms have been cited for violation of the restriction, and all of the land currently protected remains in active agricultural use.

Sixty percent of the farms are in dairy production, thirty five percent are produce farms including fruits and vegetables, and five percent are "other," including general livestock, flowers, etc.

Some thirty percent of the farms have been sold since the restriction was granted, many of which were conveyed within the family. They all remain in active agricultural production.

Proceeds from sale of the development rights was used primarily for retirement, (35%). Second highest use of the funds was for debt reduction or pay-off, (23%) and twenty one percent (21%) used the income for improvements to the farm. It is interesting to note that 10% of the owner's indicated that APR funds permitted the farm to be sold at its agricultural value.

STATUS OF THE APR PROGRAM

At the close of the 1986 fiscal year, 166 farm properties covering 16,000 land protected by the APR program. These farms range in size from a fifteen acre highly intensive market garden to 350 plus acre dairy operations. Included among these farms are apple and peach orchards, specialized vegetable farms, small fruit operations (mostly strawberries), general forage crop and livestock farms, field crops such as potatoes, cucumbers and grain corn, diversified dairy farms and specialized dairy farms. The types of farms in the Massachusetts program are an excellent cross-section of the types of food producing agricultural enterprises in the State.

The distribution of the farms reflects the major agricultural regions of the state, and the program is continuously progressing in these areas. One of the Program's major objectives is to continue to add more restricted land in the vicinity of those farms already protected, in order to secure large areas of land for agricultural production. More and more landowners are becoming familiar with the program, and the assemblage of large blocks of protected farmland is underway in a number of towns, including Westport, Lunenburg, Dudley, Hadley, Amherst and others.

In conclusion, with the development rights purchase of 3,000 - 4,000 acres of farmland per year through the APR program, it is clear that the program is filling a vital role in stemming the loss of farmland in Massachusetts. With high demand for farmland for residential housing and a resultant escalation in land values, however, it is becoming clear that the APR program is only a means, albeit a major tool, for farmland preservation.

Increasingly, each community with precious farmland resource (it wants to preserve) will have to take the lead role in developing strategies to preserve its remaining agricultural lands. Accordingly, the APR program is mapping farmland by ownerships, town by town, across the State not only for APR purposes but to provide each town with a base map of its agricultural resources from which it can develop protection strategies.

The Bureau of Land Use in collaboration with other interested groups will be preparing a hands-on how-to-do-it handbook of farmland preservation techniques for use by communities. The Bureau will work with individual communities in developing and implementing farmland protection plans.

PUBLIC INFORMATION OFFICE

Janet M. Christensen, Public Information Officer

The Public Information work of the Department relates to all Divisions and Bureaus. As events, activities, new regulations or policy issues transpire, the Public Information staff develops appropriate press advisories, news releases, speech material and brochures as needed.

Graphics work, layout, printing and editing of newsletter material from the various Divisions are also handled by the Public Information staff.

Promotion of Massachusetts farm and food products is a priority of the Bureau of Markets and the Public Information staff is involved in many related assignments. Press releases about products in season are mailed to news media across the state and brochures listing farmers and producers of many of these products are also published.

Promotional events which were highlights of the year included the 2nd Annual Massachusetts Tomato Tasting Festival, the 2nd Annual Cider Tasting Festival, the Massachusetts Fine Foods Dinner, Legislative Appreciation Day and the New England Food Lodging and Restaurant Show. With the Department of Commerce we also participated in the Fancy Food and Gourmet Show held in New York City in October of 1986.

Other areas of work which receive the most extensive media coverage are the Pesticide Bureau and the Agricultural Preservation Restriction Program. The Public Information staff handles press calls in these areas, but refers detailed inquiries to the Commissioner or staff in related programs.

Massachusetts Agriculture in the Classroom is another project with which the Public Information staff is involved, attending monthly Board meetings to encourage the development of this school program now offered to grades 4 through 6 across the state. Outreach to interest more teachers in the curriculum and expanded funding to create educational materials for other grades are priorities for the coming year.

Photography as well as all graphic arts for the Department are the work of staff member Diane Baedeker and the writing of press releases, and speech material for the Commissioner are handled by Chris Phillips.

During the school year we were fortunate to have student assistance from Boston University graduate student, Bonita Oehlke,and also Harvard University senior Sara Schroeder. Their work and also their enthusiasm and initiative were much appreciated.

DIVISION OF REGULATORY SERVICES

Lewis F. Wells, Jr., Director

While a regulatory agency's program of action may appear to be fixed by the laws and regulations under which it operates, the reality is that outside forces often dictate the details of those actions.

Such was the case with the Division of Regulatory Services during FY 1986. Several compelling outside forces had strong bearing on the activities of all of the Division's bureaus last year.

DAIRYING AND MILK MARKETING

Two outside forces - the Dairy Termination Program and the Dairy Action Plan - had particularly strong bearing on our Dairying and Milk Marketing bureaus.

The Dairy Termination Program, a federal program aimed at reducing milk production and more commonly known as the Whole-Herd Buyout, and an increasing demand for soft cheeses, lead to the present tightness in the raw milk supply available to the market. This situation influenced the activities of the Bureau of Milk Marketing.

The Whole Herd Buyout also affected the Bureau of Dairying by redistributing the numbers of farms to be inspected to different areas as adjustments were made by milk handlers to replace dairy farms going out of business.

The Dairy Action Plan increased the emphasis on less common organisms that may occur in milk. This resulted in increased attention by both the Bureau of Milk Marketing and the Bureau of Dairying on conditions, such as sanitation and temperature, under which milk is kept and handled from the cow to the package.

The Dairy Action Plan was instituted in FY 85 and will be intensified in FY 87 and subsequent years. The intensification will be based on the fact that the best sanitation and handling practices have given us a safe milk supply and that a safe milk has contributed greatly to the well being of the milk industry. Any setbacks in the safety of our milk supply will have far reaching adverse effects on the industry. Dairying is the largest agricultural pursuit in Massachusetts and the milk handling industry in New England is heavily concentrated in Massachusetts. Any adverse effects on the milk industry will directly affect Massachusetts agriculture and the Massachusetts economy.

PLANT PEST CONTROL

The Bureau of Plant Pest Control has responded to the demand for disease-free and hardy plant material by instituting certification programs in strawberries and American Beach Grass - a species being heavily used to stabilize sand and other soils and to impart a natural appearance in areas which formerly were greatly altered to sustain field and lawn grasses. This practice often failed.

The strawberry certification program new boasts a Massachusetts "success story". One Massachusetts nurseryman has become heavily involved in micropropagation, or tissue culture, of strawberries to produce virus-free plants.

PESTICIDES

The actions of the Pesticide Bureau are in direct response to concern over the effects of pesticides on human health and other components of the environment. The functions of the Bureau are also directed factors such as **economics** - pesticide and application costs are a significant part of total production costs, **resistance** - pests have become increasingly resistant to pesticides since the early 1900's, and **labor shortages** - farm labor is difficult to find and expensive. Tying up this work force with repetitive pesticide applications is not always feasible.

The Department of Food and Agriculture, in its regulation of pesticides, address the basic concerns of health and environmental effects while also considering the other factors. The Department's goal is to reduce pesticide use by twenty five percent by 1990 and by fifty percent by 1995.

In FY 86, the Department requested and received from the Legislature the resources to continue to support the development of Integrated Pest management systems, to carry out an evaluation of Massachusetts agriculture from the perspective of biological control of pests, and to begin the process of actually developing a bacterial nematocide to replace chemical nematocides which have been involved in groundwater contamination.

The Department has requested and the Legislature has granted resources to continue such efforts in FY 87. The resources budgeted exceed those in FY 86.

CONCLUSION

The word "regulation" is often associated with the word "enforcement" which has a negative connotation. The Division chooses to look at regulation as a positive force in ensuring the safety and well being of all citizens of the Commonwealth.

PESTICIDE BUREAU

Jeffrey L. Carlson, Chief

Work on regulations for the application of lawn care pesticides, and the application of herbicides on all rights-of-way, as well as development of a strategy for protecting the state's groundwater from pesticide contamination highlighted fiscal year 1986 in the Pesticide Bureau.

Also in FY86, turf was added to the growing list of Integrated Pest Management programs developed at the University of Massachusetts with support from the Department. There are now IPM programs available for apples, cranberries, sweet corn, potatoes and turf. IPM is a series of strategies for growing crops which result in fewer applications of pesticides and, thus, lower production costs to the grower. Massachusetts is one of the few states in the nation to support the development and implementation of IPM programs with tax dollars. IPM receives some federal funding through the United States Department of Agriculture. As FY '86 ended, the legislature awarded $250,000 to the Department for development and implementation of IPM in Massachusetts.

REGULATORY ACTIONS

Working with various task forces, the Bureau developed regulations for the application of lawn care chemicals, herbicides on rights-of-way, and liability insurance for pesticide applicators. As the fiscal year closed, hearings had been scheduled for:

**Lawn Care regulations which require applicators to post lawns treated with pesticides, require applicators to leave detailed instructions and fact sheets about the pesticides used, require applicators to give consumers the option of notification prior to a treatment.

**Regulations for the application of herbicides on rights-of-way require Vegetation Management Plans, to be reviewed by an advisory panel, describing the overall control strategy. A Yearly Operating Plan will be developed from the VMP and presented to local governments as well as the Department. The proposed regulations recognize environmentally sensitive areas by establishing buffer zones with various proscriptions against chemical applications.

**Insurance coverage waivers were issued for pollution liability as a result of difficulties commercial applicators had in obtaining pollution liability insurance coverage. The amended regulation required applicators give consumers an information sheet describing their insurance situation, as well as increases in general liability coverage, and a waiver of the pollution liability requirement if the pollution liability was not offered. The waiver expires in March of 1987. Waivers were issued only after a "good faith effort" on the part of the applicators to find pollution liability coverage.

**Regulations were amended to require private applicators keep records of pesticides used in the production of commodities. As a result of this, all licensed and certified pesticide applicators are now required to keep records of pesticides applied in the conduct of their business. All pesticide application records must be kept for at least three years and must be available to the Department for inspection. Licensed dealers are required to submit sales records of restricted use pesticides to the Department annually.

ENFORCEMENT ACTIONS

With the end of the fiscal year, the legislature approved an expansion in the enforcement staff-- inspectors will increase in number from 4 to 8. After reviewing year-end statistics, enforcement priorities in the coming year will be in the general residential pest control applications and the industrial/institutional pest control applications. These determinations were made by reviewing investigations and inspections through the year.

With additional staff, inspections will focus on problems of professional indoor pest control in residences and office buildings, as well as problems with pesticide drift in agricultural applications.

REGISTRATION ACTIONS

Nine pesticide active ingredients, representing over 80 products, were put on the state Restricted Use list as a result of their potential to contaminate groundwater. This is part of the Groundwater Protection Strategy developed by the registration staff. The strategy contains protocol for assessing a pesticide's environmental fate and directing state product registration decisions based on environmental fate data.

The Registration section is in the process of implementing a computer system to handle the re-registration of pesticide products. This new system will facilitate the processing of applications for product registration as well as establishing a reliable database of registrations.

CERTIFICATION ACTIONS

A total of 5,123 individuals were issued licenses of certificates to use pesticides in the Commonwealth during FY 86. Other activities in the fiscal year centered on upgrading applicator examinations and enhancing the security of the examination process. Administrative procedures to insure better documentation of all licenses and certificates were improved.

PESTICIDES

INSPECTIONS & INVESTIGATIONS

Establishment Inspections	FY85	FY86
Restricted Dealers	34	9
Market Place	18	18
Producer	8	27
Imports/Exports	0	0
Use/Misuse Investigations		
Agricultural	16	22
Non-Agricultural	39	55
Summary of Violations Cited by Administrative Order		
Misuse of a pesticide	12	12
Non-licensed applicator	5	18
Failure to keep adequate records	4	5
Use of non-registered pesticides	0	1
Distribution of non-registered pesticides	12	14
Potential for causing unreasonable adverse effects	8	3
Other Actions		
License suspension	38	3
License denied	0	2

ACTIONS TAKEN BY THE PESTICIDE BOARD SUBCOMMITTEE

Section 24-c (Special Local Needs Registration)	0
Section 24-c's denied	0
Experimental Use Permits (EUP's) Granted by the Pesticide Board Subcommittee	0
EUP's Denied	0
Additions to the State Restricted Use List	70
Product Registration Cancellations	3

CERTIFICATION AND TRAINING

Examinations Taken	2,936
Training Sessions Approved	125
Dealer Licenses Issued	122
Commercial Certification Issued	2,048
Private Certification Issued	1,527
Commercial Licenses Issued	1,237
Commercial Reciprocal Certificates Issued	189

BUREAU OF DAIRYING

David L. Sheldon, Chief

1986 was a year of great adjustment in the dairy industry. Prices for fluid milk received by dairy farmers continued to decline. The price of grain generally was down, and the price of fuels dropped considerably. Interest rates also took a downward slide. Coupled with the decrease in input costs to dairymen, this helped slightly to relieve the cost-price squeeze.

The Food Security Act of 1985 was signed into law by President Reagan on December 23, 1985. Part of this legislation provided for the Dairy Termination Program (DTP), more commonly known as the Whole-Herd Buyout. In Massachusetts, 66 producers were accepted into the program. A brief synopsis of the effects of the Whole-Herd Buyout on Massachusetts dairying is included later in this report.

Throughout this period of adjustment in our dairy industry, the Bureau of Dairying has continued to carry out its basic purpose of assuring Massachusetts consumers an adequate supply of a high quality milk, inspected under the requirements of our dairy laws (Chapter 94 of the Massachusetts General Laws.)

CONTINUED DECLINE IN MASSACHUSETTS DAIRY FARMS.

As of July 1, 1986, our dairy-farm producer roster tallied 642 farms - a decline of 45 farms in one year. It was a continuation of the 5-to-6-percent decline in Massachusetts dairy farms which we have been seeing for the past few years.

Close observation reveals that there was an acceleration in the decline during the last three months of FY '86 due to the Whole-Herd Buyout. It should be noted that this program does not end until September 30, 1987, and there will be additional Massachusetts producers leaving dairying via the program.

In addition to the Whole-Herd Buyout, we are continuing to see further erosion of our producers as a result of urban pressures and other unfavorable economic factors.

MILK PRODUCTION

The production of fluid milk in Massachusetts for 1985 bounded up to 608 million pounds from the depressed level of 573 million pounds produced during 1984. This increase occurred after the Federal Milk Diversion Program ended on March 31, 1985.

We expect that the 1986 total fluid milk production for Massachusetts will be off somewhat from the 1985 figure as a result of the buyout.

DAIRY TERMINATION PROGRAM

Massachusetts was hit especially hard with the DTP. As reported earlier, we had 66 bids accepted. The bids involved 68 individual farms, since in two cases the persons making the bids owned or had an interest in two farms. This level of acceptance represented about 10 percent of the total number of dairy herds in Massachusetts.

More significantly, these farms represented 19.13 percent of the milk produced in Massachusetts. Our larger herds turned out to be the main participants in the program. We will loose 8,117 cows, 1,636 heifers and 901 calves.

Those losses are particularly significant in a "deficit state" which already produces only 10 percent of the milk it consumes.

The average Massachusetts bid was $12.30 per hundred pounds of milk produced during the 1985 calendar year.

Working with the Dairy Diversification Task Force headed by Assistant Commissioner Charles Costa, we surveyed all participants in the program in hopes of keeping as many of these farms as possible in some form of agriculture. The greater percentage of the producers in the program indicated to us that they would stay in some form of niche agriculture, such as logging, sweet corn, hay, blueberries, Christmas trees, goat dairying and beef production. All producers accepted into the DTP must stay out of any form of dairy-cow farming for a five-year period. We expect to have very few of the program participants returning to dairying at the end of the five-year period.

DAIRY ACTION PLAN

Throughout the past year, the Bureau has implemented the provisions of the Dairy Action Plan by tightening inspections throughout the milkshed. We have checked regularly the temperature of the milk being received at our milk receiving, transfer, and pasteurization plants. To date, we have found the temperature of this milk to be below the 45-degree level established in the plan. In most cases, in fact, the temperature has been 40 degrees and below.

Our continuing inspection of the cooling capabilities of farm bulk tanks occasionally has turned up slow-cooling situations which immediately are brought to the attention of the dairymen. Follow-up inspections are made ensure the problem is corrected.

The FDA reports that the Listeria organism is under continuing study to determine the effectiveness of pasteurization on its various forms. In addition, studies are being conducted to readily isolate and identify this organism in milk.

REGULATION

No new dairy regulations were promulgated during the last fiscal year. We are continuing to work with the Massachusetts Department of Public Health's Division of Food and Drugs on new regulations.

These regulations will set new definitions for milk and milk products. They also will set new standards for milk, requring the monitoring of milk from the processing plant to the consumer. These regulations will follow closely the P.M.O., and it is expected that this Bureau will reference the final regulations to cover our milk plant inspection work.

GOAT MILK

The Bureau continues to receive calls from farmers interested in setting up goat dairies. Current Massachusetts law does not cover goat's milk in any form. Since this Bureau wants to strongly support Massachusetts agriculture in all forms, we do go out to these farms and make recommendations on the proper way to set up the dairy. We use our current dairy-cow regulations to make those recommendations, interpreting them to fit a dairy goat farm.

Legislation was filed in November of 1985 to identify goat's milk and define a goat dairy farm. At the hearing held in March, of 1986 the bills encountered heavy opposition from the goat dairymen and they were referred to a study committee.

INTERSTATE MILK SHIPPERS PROGRAM

This program is a cooperative program between the United States Food and Drug Administration and each individual state. The Bureau carries out the provisions of the raw-milk portions of the program for the Commonwealth of Massachusetts. We have a very high level of participation in the program, with approximately 92 percent of our Massachusetts producers involved in an I.M.S., B.T.U.

During the last fiscal year, our portion of the program was evaluated by the FDA and our weak areas were pointed out. We are working to correct the problem areas as readily as time and manpower permits.

MASTITIS PROGRAM

The mastitis program remains very strong, with total enrollment in the program holding up well despite the average annual deadline of 5-6 percent of our dairy products. The increasing demand for quality milk, the use of pre-incubated counts, and the drop in the Somatic cell count action level to 1 million on July 1, 1986, have prompted producers to seek help with their dairy problems.

We have a very valuable asset in our mastitis program. It is unique in that it is free to all dairymen in Massachusetts, whereas many states either have no program of this type at all or else charge for the work done.

U.S.D.A. DRY MILK SAMPLING

We have only one milk-powder plant located in Massachusetts - the Agri-Mark facility located in West Springfield.

We currently have one man spending approximately 1/3 of his time sampling powder at this plant. Agri-Mark was planning to have a resident USDA grader at the plant in 1986. But those plans have been shelved since the volume of milk available to the plant is slowly turning down.

The overall return to the Commonwealth of Massachusetts from U.S.D.A. for our dry-milk sampling activities during the 1986 fiscal year was $7,821.21. This figure is more than double the amount returned to the state during the 1985 fiscal year, reflecting the increased time spent on dry-milk sampling.

OUT-OF-STATE INSPECTION PROGRAM

On January 1, 1986 we issued 6,739 Certificates of Registration to the dairy farms in our out-of-state inspection areas. In addition, we have permitted 24 pasteurization plants and 46 receiving or transfer stations in our out-or-state milkshed. The Massachusetts milkshed in which the plants and producers are located made no significant expansion.

EXTRACURRICULAR ACTIVITIES

The Bureau of Dairying was responsive during the '86 fiscal year to many calls for assistance on projects which fall outside of our regular work.

We have worked cooperatively on the following projects:

1. Massachusetts Hay Survey
2. Massachusetts Farmstead Cheese Association
3. Hurricane Gloria Damage Assessment
4. Scenic Farm Roads in Massachusetts
5. Scenic Farms in Massachusetts
6. Massachusetts Roadside Stand Survey
7. Herd Buyout Task force

FY '86 STATISTICS

STAFF - As of June 30, 1986 - 9 Inspectors - 3 Senior Inspectors - 1 Supervising Inspector - 1 Chief - 2 Secretaries

During the 86 fiscal year we filled one out-of-state inspector position in the State of Maine. We continue to have one inspector position open in the Central Massachusetts area which we hope to fill in the near future.

FARMS

Dairy Farms Inspected:	7,681
Approved:	6,179
Not Approved:	1,502

Dairy Farms Reinspected:	1,630
Approved:	1,340
Not Approved:	290

Ten-day letters sent to producers on reinspection for failure to correct violations on the inspection report: 201

Hearings Held: 5

Producers suspended for failure to comply with the regulations after receiving a ten (10) day letter and/or a hearing being held: 15

Producers reinstated: 6

Other farm visits: 1,149

PLANTS

Milk Plants Inspected: 66
Approved: 54
Not Approved: 12

Dealer Visits: 357

Plants Spot Checked: 14

SAMPLES

Water samples collected: 147

Milk Samples collected: 0

MASTITIS PROGRAM

Herds Sampled: 573
Cows Sampled: 31,711
Samples Collected: 125,571

SAMPLING SURVEILLANCE PROGRAM

Bulk Tank samplers checked: 10

Bulk Tank trucks checked: 83

INTERSTATE MILK SHIPPER'S PROGRAM

Listed ratings in the I.M.S. Quarterly Publication: 14

Massachusetts Dairy Farms rated: 134

U.S.D.A. DRY MILK SAMPLING PROGRAM: 42 Days

DEALER REGISTRATION

A total of 128 Milk Dealers registered with the Bureau during the 1985 fiscal year as required by Chapter 94, Section F of the General Laws.
Bureau of Dairying personnel traveled a total of 326,137 miles during the fiscal year to accomplish this work.

CONCLUSION

The Bureau of Dairying strives to operate as a team. With this mode of operation, we are most effective and have the greatest probability of completing our assigned work.

At this time, I wish to sincerely thank all members of the Bureau of Dairying for their strong efforts to get the job done during the 1986 fiscal year.

Many thanks, too, to all persons in the dairy industry who have worked hard to cooperate with the recommendations of our inspectors.

To keep us moving and the bills paid, we can count on the full support of the Commissioner and all staff members of the Department of Food and Agriculture. This support has been there at all times and we are very thankful for it.

BUREAU OF FARM PRODUCTS

James M. Cassidy, Chief

The Bureau of Farm Products administers a diversified quality-control program for farm products, including the Federal-State Fruit and Vegetable Shipping Point Inspection Service, and also enforces truth-in-labeling laws for feed, seed, fertilizer and limestone. In addition, the Bureau regulates certain produce-branding labeling and storage laws and collects more than $125,000 a year in product registration and inspection fees.

The Shipping Point Inspection Program is regulated by a memorandum of understanding with the U.S. Department of Agriculture. All other regulating functions are under the provisions of Chapter 128, Massachusetts General Laws as amended. Thanks to a generally efficient marketing system in the United States, fruits and vegetables can be grown where climate, soil and geography are most suitable, and then delivered fresh and wholesome to consumers thousands of miles away. If you're part of this far-flung system - a grower, processor, shipper or receiver - the Massachusetts Department of Food and Agriculture's official grading services can play a pivotal role in the smooth functioning of your business. For sellers, the grading service can provide assurance that products meet specific grade or contract requirements; for buyers, assurance that they are getting the high quality they expect, regardless of whether the shipper is across town or across the country.

As the basis for these grading services, the USDA has developed official grade standards for fresh fruits, vegetables, tree nuts, peanuts and other commodities. Among the most widely used are the U.S. standards for grades of apples and potatoes.

Shipping-point grading is provided through federal-state cooperative agreements, which are in effect in 48 states and Puerto Rico. In general, these agreements specify that grading is to be done under the joint direction of federal and state agencies. Federal supervisors license the graders and are responsible for training and supervising them in the interpretation of the standards, methods of grading and certificate writing. The state cooperating agency hires personnel, collects and deposits fees and performs other field tasks. Terminal-market grading is provided by federal employees who have been licensed and appointed a collaborators. They carry federal appointments, but are paid by the state.

The grades furnish a yardstick for measuring variations in quality and provide a common trading language with terms clearly defined and uniformly understood nationwide. Their use has mad possible a basis for satisfactory long-distance dealing. The standards often are indispensable in the settlement of deputes between buyers and sellers, as well as claims against transportation companies. They form a basis for market news prices and permit more effective distribution of fruits and vegetables by separating them into various grades and sizes. But it wasn't always so.

Prior to the first standards in 1917, the potato industry had developed its own grading standard in response to changes it faced during the turn of the century. Until about 1890, most produce was grown on high-priced land close to the cities. It was not until long-distance shipping was made possible through the use of ice and refrigerated rail cars that production shifted to less expensive land farther away from the principal consuming areas. As was to be expected, this rapid shift from local dealing to long-distance dealing created many new problems, not the least of which were the inability of buyers to view products before ordering them and the lack of uniformly defined descriptive terms. One person's "jumbo" was another's "medium". One person's "beautiful" was another person's "fair". A rose could be a pretty flower or an ugly thorn, depending on who was doing the describing.

This state of confusion could not be prevented during the early part of this century, since there were no standards by which to measure the value of produce.

Abuses by tradesmen were not the only handicaps to be endured in the face of this often unintentional lack of communication. Without standards, there was no equitable basis on which to make future contracts. If a dispute arose between a buyer and seller, there was no basis for settlement. Claims against transportation firms were difficult to settle because it was virtually impossible to establish the value and condition of the products at the time of shipping.

Growers themselves were responsible for the first efforts to ease a bad situation when they began marking containers with their names. Many were successful in building a personal reputation by packing high-quality products. If the products were of lower quality than normal, they indicated so.

The next step in the standardization process was the grading at markets by commission employees. Another development was the use of trademarks brands by some of the larger shippers and producers. This led to the use of definitely established standards. Brands and trademarks still are used widely today, but are coupled with official standards for grade and size.

In 1913, Congress gave the new Secretary of Agriculture $50,000 to examine the possibility of establishing national standards. It was the beginning of a concentrated effort by the federal government to help fruit and vegetable growers market their goods.

Since that time, dozens of grading standards have been established and amended in cooperation with the industry. Currently, there are 154 standards covering 83 commodities.

FISCAL YEAR 1986

Demand for our inspection services in FY 1986 again was weighted heavily toward export apples, primarily to the United Kingdom and Canada. Apples also were inspected for shipment to California, where demand has been increasing steadily, All totaled, more than 250,000 bushels of Massachusetts apples carried federal-state inspection certificates for export.

The export apple inspections are of major importance, primarily because of the demand for "controlled-atmosphere" stored apples such as our valuable McIntosh variety and quality packs. McIntosh apples cannot be grown successfully in European countries. The controlled atmosphere method of storing apples greatly lengthens the marketing season, allowing shipment of apples in good condition well into June.

Inspection certificates also are issued for potatoes and onions in the Connecticut Valley, and for cranberries on Cape Cod.

FEED PROGRAM

More than two thousand labels of animal feed, pet food and medicated feed ingredients were reviewed and registered during FY 1986. Samples of products offered for sale were drawn and tested at the West Experiment Station, University of Massachusetts.

FERTILIZER PROGRAM

Nine hundred and eighty labels of fertilizer and limestone were reviewed and registered. Tonnage taxes were assessed and collected semi-annually. Assessment penalties in shortage of guarantee level were levied, with $8,656 in fines collected, turned back to farmers or submitted to the state Treasury.

SEED PROGRAM

Eight hundred and forty-eight official samples of seed - crop seed, vegetables, lawn mixtures, flower tree and shrub seed, etc. - were tested for truth in labeling. Fifty-two stop-sale orders were issued on violations, involving 457 packages. Seed were removed if they showed poor germination, noxious weeds or other unfit characteristics. Twenty-eight violations were sent to the USDA Seed Branch for further action.

LIME PROGRAM

Thirty-five limestone brands and grades were registered and checked for conformance to labeling during the fiscal year. 72,532 tons of lime were applied to the land in FY 1986, compared to 64,051 tons the previous year.

BRANDING LAW

Inspections were made at farms and at wholesale, retail and roadside markets to enforce apple, potato and native laws. Misbranded products were relabeled or removed from sale. More than 3,000 retail stores and several packing-house operations were inspected.

STORAGE LAWS

Records are kept on cold-storage and controlled-atmosphere apple rooms in order to check compliance with storage laws, thereby allowing those products to move into certain market areas of the country.

The Bureau, through strict adherence to laws, grades, label reviews and other essential data, has done much to up grade the quality and condition of farm products offered for sale in Massachusetts.

These programs reflect general crop conditions and market situations. The uniform laws and grades allow for products in interstate and export commerce.

Working with other states, the USDA, the Food and Drug Administration and various regulated industries, the Bureau and the Department have helped foster the marketing of high-quality products.

Seed Inspection Program/Officially Tested

	1983	1984	1985	1986
Agriculture	48	61	73	**47**
Mixtures (lawn)	47	33	80	**68**
Vegetables	409	361	537	**551**
Flowers	125	101	158	**115**
Sprouts	8	10	-	**3**
TOTAL	637	566	848	**784**

25 stop-sale orders covering 59 lots on 210 packages of seed removed from sale for poor germination, noxious weeds, unfit for seeding, out of date, etc. 10 cases turned over to the USDA for action under Federal Seed Act.

Fruit and Vegetable Inspection Revenue

	1983	1984	1985	1986
Apples	$8,822.93	$8,678.15	$9,218.41	$7,972.74
Cranberries	360.00	280.00	1,321.00	140.00
Onions	700.70	314.02	-	-
Potatoes	613.81	920.24	469.00	66.69
TOTAL	$10,497.44	$10,192.41	$11,008.41	$8,179.43

BUREAU OF MILK MARKETING

John B. Kelley, Chief

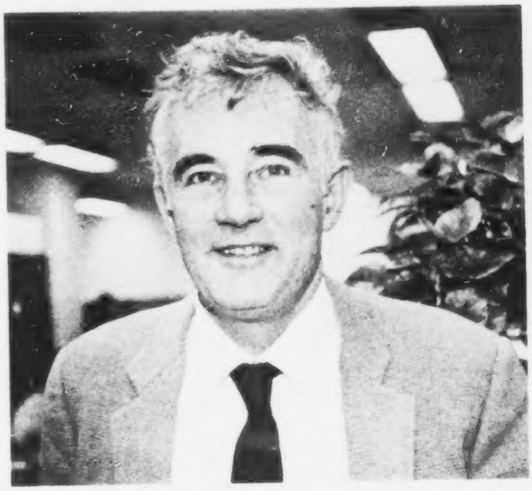
Over the past several years, the Boston fluid milk market has expanded beyond the traditionally recognized metropolitan limits. Today, in addition to the greater Boston, Worcester and Springfield areas, it encompasses the growing, heavily populated counties of Southern New Hampshire, as well as Rhode Island and parts of Connecticut.

All totaled, some 8 million people reside within the Boston Zone I market, a full 2 percent increase over the past five years.

Moreover, a dramatic increase in the commercial disappearance of milk, coupled with the Whole-Herd Buyout and declining support prices, has caused extreme tightness in the raw milk supply available to the market.

Not surprisingly, these shortages have had a significant impact on milk prices in the Boston region. During the fourth quarter of 1986, buyers were paying a 25-cent premium on milk. Spot-milk prices were even higher.

This move into what effectively is an open-market pricing situation for milk has added a whole new dimension to a market which historically had operated on an announced-price basis.



Despite these changes, prices for milk in the Boston region continued to be among the lowest in the nation.

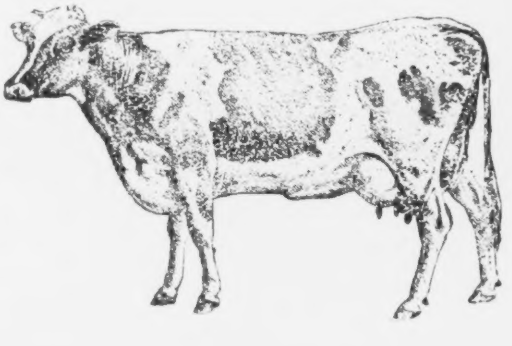
In other developments affecting milk marketing in Massachusetts during the 1986 fiscal and calendar years, the Massachusetts Producers Security Trust Fund continued to grow. The fund protects independent producers shipping to proprietary handlers. Total invested in the fund as of December 1986 was $250,000.

Meanwhile, the Bureau has been asked by the Milk Stabilization Branch of the California Department of Agriculture to provide some guidance as to how they might establish a producers' security fund in that state. That request came in the wake of the bankruptcy of a major milk handler in California.

The Bureau of Milk Marketing reviews on an ongoing basis the security needed to comply with the provisions of Massachusetts General Law Chapter 94, Section 42. Total security on file as of December 1986 was $1,132,000.

Under Commonwealth of Massachusetts Regulation 7:00, the Bureau conducts bi-annual seminars and testing for bulk-tank drivers. These seminars help ensure the validity of raw milk samples, the crucial link in the movement of milk to market.

During the 1986 fiscal and calendar years, the Bureau continued to input critical data into its automated data-processing system. The licensing of milk handlers, bulk-tank drivers and individuals testing milk for butter-fat content is being handled efficiently through this computer management system.



BUREAU OF PLANT PEST CONTROL

Peter C. Kuzmiski, Chief

NURSERY and GREENHOUSE INSPECTION

A total of 322 nurseries were inspected and certified in FY '86, a decline of about 30 from the previous year. Most of those which went out of operation were small backyard plots. Greenhouse inspections were made for 43 establishments during this period.

Insect pests commonly found in the nurseries were leaf-chewers, leaf-tiers, aphids, mites, scales, borers and gall-makers. The Birch Leaf Miner continued to be heavy on Gray Birch stock. Japanese Beetles were found throughout, but only sporadically in high concentrations. The Gypsy Moth was noted in areas of southern Worcester Bounty, southeastern areas of the state and in areas on Cape Cod. This pest was not of major concern in the nurseries and was kept well under control.

Common plant diseases noted were the leaf spots, leaf scorch, and mildews.

More nurseries are adopting the practice of plant tissue culture propagation, containerization of their stock, and the drip method of irrigation.

The task of nursery inspection is carried out in all states. Although the number of inspectors per state varies, the responsibilities generally are the same: to detect pest problems and prevent their spread. In Massachusetts, we have a field staff of seven to ten people who are involved in nursery inspections during July and August. Three of the staff are permanent employees.

Plant pest detection and control by nursery inspection is necessary and beneficial for several reasons. Many pests have limited distribution, and preventing their spread on infested or infected plants aids in the containment of these pests. Another advantage of having a nursery inspected is that those pests which are prevalent and capable of causing serious damage are noted and appropriate controls are prescribed. Also, early detection of a pest problem will aid in preventing spread within the nursery, or permit controls to be applied before the problem reaches epidemic proportions.

All states now require that copies of a valid nursery inspection certificate accompany each interstate shipment of nursery stock.

PEST SURVEYS

Surveys were conducted for presence of the European Chafer, Gypsy Moth, Golden Nematode of potato, and Red Stele disease of strawberry. No new catches of the European Chafer were realized. Traps for this pest were located outside of the known infested Greater Boston area. Gypsy Moth surveys were done on lands surrounding nurseries. These lands showed little or no infestation by this pest. Golden Nematode and Red Stele surveys were negative.

APIARY INSPECTION

Year	Number of Colonies Inspected	%AFB	%EFB
1984	11,531	1.7	1.2
1985	13,201	2.42	.45

Estimated number of honeybee colonies in Massachusetts.........20,000

AFB-American Foul Brood disease
EFB-European Foul Brood disease

In 1985, over 500 samples of 100 bees each wee collected by a staff of six apiary inspectors. Laboratory personnel consisting of three individuals performed the diagnostic work necessary to determine the presence of tracheal mites on these bees. Some positive samples were found on bees taken from two migratory beekeepers. No positive samples were found on bees taken from hobbyist hives.

Sampling continued throughout 1986 for presence of Tracheal and Varrora Mites, and the Africanized Bee.

SPECIAL CERTIFICATION

State plant phytosanitary certificates issued..........	21
State tree and shrub seed inspection certificates issued......................	535
Federal phytosanitary certificates issued..........	76
Federal phytosanitary certificates for apple export issued..............	140
Ribes control-area permits issued..............	14
Houseplant inspection certificates issued..........	48

Plant phytosanitary certificates are issued after inspection of plants or plant products destined to states or foreign countries.

COLLABORATION WITH USDA-APHIS

Collaboration was maintained with USDA in the Cooperative Nation Plant Pest Survey and Detection Program.

Plans are under way for a strawberry virus-free certification program, and a certification program for growing Cape American Beachgrass, (Ammophila breviliqulata) with the U.S. Soil Conservation Service.

Collaboration with USDA also continued in enforcing the Gypsy Moth and Black Stem Rust federal quarantines, as well as the Pest Detection program.

Post-entry quarantine required inspection of 45 sites growing stock from foreign countries.

DIVISON OF ANIMAL HEALTH

Mabel A. Owen, Director

The goal of the Division of Animal Health is to control effectively or completely eradicate certain domestic animal diseases, all of which have a direct impact on human health or on consumer cost. Cattle, swine, horses, sheep, goats and poultry are all produced in numbers in Massachusetts. Their collective value is in the hundreds of millions, as is also the annual value of their products. The livestock business is the cornerstone of the entire agricultural economy here. It is the pride and livelihood of a settled and viable farming community, with members on almost every road in almost every township. Of primary importance, it is the source of fresh, high-quality, safe, value-effective and nutritious food and food products.

The safety and quality of the product is monitored by the Division of Animal Health via a series of disease surveillance, testing, inspecting, and vaccination programs.

Since there are more than 130,000 dairy and beef cattle, approximately 50,000 horses and ponies, more than 50,000 swine, close to 20,000 sheep and goats and almost three million birds all of which are maintained at well over 30,000 locations, the inspecting and record-keeping tasks are huge. The work itself is either professional or highly technical in nature, requiring specific medical and animal husbandry knowledge, as well as familiarity with both the application and the intricacy of a number of import-export laws and regulations, subject to frequent change.

It is important to realize that no domestic animal moves in and out of state without a permit, a health certificate and the negative proof of up to half a dozen individual tests. Each animal, furthermore, must be individually and accurately identified, and its records maintained for years, with complete traceback capability. Tens of thousands of animals, as well as millions of birds, move freely, from owner to owner to consumer via sales and processing plants. Such commerce is complex, and it must be error-free. The office staff is both experienced and talented, and Massachusetts enjoys the status of being officially disease-free in Bovine Brucellosis, Tuberculosis, Pullorum-Typhoid and a number of other diseases as a well-earned result.

THE TUBERCULOSIS PROGRAM

All cattle in the state are scheduled to be TB-tested, at state expense, once every three years. Almost every producing dairy cow in Massachusetts is tested annually (interim years at owner expense) in order to satisfy milk-marketing requirements in nearby states.

Although tuberculosis has been on the upswing in recent years, especially in humans in dense, urban populations, the disease has not appeared in cattle in the northeastern United States in almost five years. Massachusetts has had none in its herds in over eight years.

THE BRUCELLOSIS PROGRAM

On June 30, 1986, Massachusetts marked the end of its 38th month as a "FREE" state in Brucellosis. It is more than four years since a case of field-strain brucellosis was found here. This rating now shared by 22 state, most of which are in the northeast, clears our cattle to go or come without exposure to this expensive and herd-debilitating disease. It protects our populace from Undulant Fever and it adds materially to the value of our cattle herds. "FREE" status is federally conferred on a state, but required certain state-paid programs to be in place:

1. The vaccination of all female calves between the ages of four and eight months.

2. Effective cattle dealer licensing and reporting.

3. The retest of all imported cattle.

4. A 100% traceback capability for any suspects discovered at slaughter (Market Cattle Inspection) or routine milk testing (Brucellosis Ring Test).

Since an occasional calf becomes infected with vaccine strain of Brucellosis, even with the low-density vaccine now in use, it is not unusual to find a "suspect" at time of slaughter, but each is traced back to its farm of origin and the entire herd there is tested for clearance of disease. Although large areas of the United States are now "FREE" or "A-STATUS", brucellosis remains endemic in the south and since Massachusetts is both a cross-roads state and a cattle importing state, this disease program has first priority in the Division of Animal Health.

SWINE BRUCELLOSIS

At the end of FY 1986, this disease was known to be present in one swine herd, which is no longer being maintained as a breeding herd, and whose sows are being consigned to slaughter. An increased rate of testing in the southeastern counties which have had sporadic outbreaks of swine brucellosis in the past, has revealed no new infected herds. Most of the state has been Validated FREE for some years. The increasing pressures of suburban growth on our pork producers has resulted in the close-out of a number of herds as well as a large-scale switch in feeding procedures from garbage and waste to grain. Swine feeding remains an effective means of recycling the waste products restaurants and food processors, but this viewpoint is not fully shared by a number of suburban dwellers who have not had a farm background.

OTHER SWINE DISEASES

Since swine pseudorabies appears endemic in parts of the mid-West, hog cholera has recently broken out in Europe and African Swine Fever is as near as the Caribbean. All three diseases are under surveillance in Massachusetts. This testing is done as part of a program under which the federal government now supervises the cooking of garbage for swine. None of the three diseases have been found in Massachusetts, although surveillance testing will continue. International travel, with the attendant danger of bringing foreign diseases onto our farms, continues to send literally millions of Americans into countries where not only do hog cholera and african swine appear commonly, but other even more serious. Foot and mouth disease is still as near as Europe.

Preventing the entry of one of these diseases, exotic to our area, is an integral part of our overall program of disease eradication, as well as one for which we have a cooperative agreement with USDA-APHIS.

PET SHOP LICENSING

Pet shop licensing was designed primarily as a humane animal-protective procedure. Pet shop inspection is primarily in the hands of agents of the M.S.P.C.A., and the Animal Rescue Leagues of Boston and New Bedford, but since humane societies are not branches of government and do not have licensing powers, pet shop licenses are under the jurisdiction of the Division of Animal Health. Licensure requires that records must be maintained, including name and address of buyer, regarding the sales of any bird or animal for a sum exceeding twenty-five dollars. This provides the Division with full trace back capability after the sale of most pscittacine birds, large parrots in particular. Almost all of these are imported from South America, where Exotic Newcastle Disease is common in wild-caught jungle birds. Federal quarantine stations are maintained for these imports, but smuggling continues unabated, with resultant disease outbreaks.

One outbreak occurred in the aviary of a mid-Atlantic area bird wholesaler in early 1986. Since hundreds of parrots from this aviary already had been sent into New England, most to Massachusetts, all of the exposed birds had to be located - mostly through pet shop records - and tested. Fortunately all were negative, but since Exotic Newcastle could wipe out our domestic poultry industry, any failed trace back might mean disaster.

A second, and recurrent, problem arising from pet shop operation is their sale of puppies and kittens. Although these animals remain well outside our food chain, their sale is an emotional experience to many people rather than a simple purchase.

Puppies and kittens are usually raised in the mid-west and shipped to Massachusetts at eight weeks. These small animals are stressed by the trip and exposed to many respiratory infections both en route and in the pet shop prior to sale. Almost all manage the assorted traumas well, but those that do not provide customer relation problems of no small order. Given the mass-production procedures of their raising, and shipment, as well as the fragileness of the product and the fact that consumers prefer to make a "free choice" purchase, the problem becomes monumental.

Office meetings between one of the leading pet shop chain operators, the humane societies and both staff and private veterinarians were held in FY 1986, with reasonable agreement on all issues. Consideration was given to re-opening the Pet Shop Rules and Regulations to public hearing and is being planned for early FY 1987. At the end of FY 1986 227 pet shops were licensed. Although these are regularly inspected by humane society agents, each one also received two or more visits each year by the Division field staff personnel.

GUARD DOG BUSINESS LICENSING

FY 1986 completed the third full year of licensing. Nine kennels were approved and the inspecting agencies (MSPCA and ARL) continue to express approval with the program.

HEARING EAR DOG TRAINING KENNEL LICENSE

Although licensing of these kennels was mandated by law in FY 1985, no rules and regulations for this license have been promulgated and no licenses have been issued. Since the two establishments which come under this have been regularly inspected, and since the Division has, so far, been unable to add a position carrying canine training expertise as job requirement, this program remains on low priority in the Division.

RABIES CONTROL

Massachusetts law requires that physicians and hospitals report all animal bites to the local animal inspector or dog officer in order that the biting animal, usually a dog, an be placed under a 10 day quarantine for rabies surveillance. This disease, almost always fatal to a human, has increased alarmingly in raccoons in the mid-atlantic states, the spread moving inexorably northward several hundred miles per year. As a result, this particular surveillance program rates a high priority in the Division.

Although the disease poses no immediate threat in New England, the public should realize that only a fully vaccinated canine population stands between people and the area's wildlife, whose rabies status cannot be guaranteed. Be sure your dog is vaccinated and consider the same protection for your cat. If you plan to visit abroad, especially in Africa, arrange to receive your own vaccination, using the new, human diploid (HDC) vaccine. Details are available through the Massachusetts Department of Public Health.

POULTRY PROGRAMS

Massachusetts was less than fortunate, in January of 1986, to find a small broiler flock infected with Avian Influenza, a disease which had again broken out in Pennsylvania and New Jersey. With the complete cooperation of the owner, the United States Department of Agriculture, Animal and Plant Inspection Services (USDA-APHIS) and the state's poultry industry, this flock was euthanized and buried within 36 hours of confirmation of disease and a potential outbreak was held to one disease incident. This did indeed, however, have the potential for disaster and resulted in immediate quarantine and the activation of emergency contingency plans. The Division was able to pay for the burial of the diseased birds and other infected materials on the farm. Full-state surveillance procedures were set into motion immediately, covering livebird markets, egg and meat bird producers and hatcheries. No other infection foci were found although live-bird markets in Rhode Island, New York, New Jersey and Connecticut were discovered to be infected. Temporary bans were placed on showing, bird selling and live transport. Cooperation by the entire industry was immediate and complete, and the Massachusetts Poultry Association responded generously to every need.

Epidemiological tracebacks by the USDA implicated New York city markets and live haulers, especially those moving through Connecticut into Massachusetts. This disease problem pinpointed the strong need for poultry disease control and tighter restrictions over the sanitation of live-bird crates. Legislation will be proposed early in FY 1987.

Meanwhile, Pullorum-Typhoid testing was placed in some abeyance in order to free our Poultry staff for AI work. The state itself remained pullorum-free, despite a severe outbreak in Maine and New Hampshire caused by the importation into those states of day-old chicks from a Pennsylvania hatchery with infection. It is important to realize how very infectious poultry diseases are, and how rapidly they spread through a poultry house. Birds of the air, all species of chicken, turkey or guinea hen are almost totally susceptible to air-borne diseases.

RIDING ACADEMIES

Patricia Rule, Supervisor

Of the 25,000 horses in Massachusetts, better than 5,000 are used in riding schools for teaching or rental purposes. All horseback riding instructional facilities are required to be licensed in Massachusetts, and there are 300 stables that are licensed for these activities. A questionnaire was distributed to these stables to gather information about this segment of a large industry, to pinpoint problems and determine subjects of the greatest concerns, so that the Department of Food and Agriculture may decide how to best direct its support and assistance.

One hundred and thirty-five farms responded and highlights of the results are featured in this report. A full report can be obtained by writing to: Patricia Rule, Supervisor of Riding Academies, Division of Animal Health, Massachusetts Department of Food and Agriculture, 100 Cambridge Street, Boston, MA 02202.

The riding school could be considered the primary place of introduction to the horse industry. This is where the learning stages of horsemanship take place. This is also where the novice encounters the wide varieties of breeds, and the wide range of activities associated with the different breeds. Anyone who works with horses knows there is a standard of knowledge necessary in order to safely ride or handle horses in an any capacity. The broad spectrum of activities, such as those listed below, all require the same basic knowledge of the animal. This knowledge is only acquired in one place: the riding school.

Polo, saddleball, barrel racing, endurance riding, hay/pony rides, saddleseat, drill teams, racing, steeplechasing, roping, therapeutic, eventing, breeding, parades, vaulting, harness racing, reining, camps, dressage, pulling, hunting, jumping, pleasure riding, driving, showing, rodeo

The survey shows that nearly 75% of the horses counted are kept on farms of less than 50 acres and on only 39% of the actual land area in the survey. The other 25% of the horses enjoy 61% of the land area. More than 50% of all farms in the survey are less than ten acres, and have only 9% of the land area available for horses. This 9%

land area supports better than 30% of the horses. **Twenty seven percent of the farms are less than 5 acres and they have only 3% of the land area and support 14% of the horse population.** Only seven out of the 120 farms in the survey had over 100 acres.

There is a problem with land area for horses in this state, especially where riding schools are concerned. Many of the schools rely on trails and land other than their own farm for riding. Since this is being curtailed by development and population increases, riding area and suitable areas for horses is being lost at an alarming rate. In addition to population increases, are the multitudes of other problems: loss of grazing land for horses, problems with town zoning laws, neighbors, vandalism, traffic, and conflicts with dirt bikes and off road vehicles. Loss of riding trails necessitates the increased use of roadways. People and cars seem to be decreasingly considerate of horses and riders. Despite these problems, part of the survey shows that there is an increasing demand for the riding school - the industry as a whole wants to expand, there is a need for riding schools and the need is expanding.

The importance of the riding school as a portion of a multi-million dollar industry cannot be overlooked, nor should it be diminished. Thoroughbred and Standardbred racing, breeding, Quarter horse racing, roping, reining, eventing, and dressage olympics are big business.

Where is all the interest generated? Where does the industry get its beginnings? Both the love and knowledge of horses takes root at the riding school. This level of the industry, however, is seldom big business. It is the grass roots place where children learn to ride safely and to clean and care for horses. This is the place of therapeutic riding, gymkhanas, good sportsmanship, athletics, love for animals, and knowledge of farm work. This is where children can learn responsibility and the value of hard work.

If the rest of the industry and the Department of Food and Agriculture do not support this segment of the industry, the result will be a loss of interest in the industry, a loss of revenue, and a lack of knowledge by those who deal with the industry. Education is supported and paid for in all other fields. The riding school however, has seen an increase in overhead and a loss of land and all the elements necessary to run a good program. The income generated is proportionately less every year, The cost of riding a horse has not increased enough to support the cost of caring for it.

DIVISION OF EQUINE PROGRAMS

Peter Bundy, Acting Director

The Massachusetts Thoroughbred Breeding Program is a state incentive program designed to increase the interest, involvement and input of state residents in the breeding of Thoroughbred horses in Massachusetts. The program came to life in 1969 by an act of the Massachusetts Legislature and is administered by the Massachusetts Department of Food and Agriculture.

Until 1981, a lack of funding left Massachusetts trailing behind other states in thoroughbred breeding.

Then, in 1981, the Legislature came through with the passage of Chapter 558, which increased the Massachusetts Thoroughbred census considerably. In 1985, the program was further enhanced as the result of Chapter 580, which increased the funding to one half of one percent of the total handle at Suffolk Downs, subject to appropriation. The previous funding level was one-fourth of one percent.

In Fiscal Year 1986, Massachusetts spent a total of $540,786 in its efforts to enhance the Thoroughbred Breeding Program. The program offers cash incentive awards to breeders and owners.

A registered Massachusetts-bred, thoroughbred horse which finishes first, second or third in any parimutuel race receives a cash breeder's award equal to 25 percent of the purse money won by that horse. The

cash owner's award in an unrestricted, parimutuel race is equal to 20 percent of the purse monies won by that horse. The cash stallion owner's award, for stallions which stood the breeding season from February to June in the Commonwealth, and is registered with the Massachusetts Department of Food and Agriculture, is equal to 15 percent of the purse money won by that horse.

In addition, the program offers a schedule of Stakes Races, which are restricted to eligible Massachusetts horses and run each year at Suffolk Downs.

The 1986 stakes racing schedule included 13 races, with a combined total purse of $322,500.00. An estimated 15 to 20 races are scheduled for FY 1987.

Suffolk Downs management was responsible for contributing $94,000 of the total purse in support of these exclusively Massachusetts-bred races. The program itself provided $228,500.00.

The breeder, owner and stallion owner incentive awards, given for racing at Suffolk Downs and two agricultural fairs, amounted to $312,286.12. At these races, Massachusetts-bred horses went to post 1039 times, accounting for 100 wins, 114 second-place showings and 144 third-place showings.

According to the current census, there are 250 to 300 thoroughbred farms on 8,000 to 9,000 acres of farmland in Massachusetts.

Last year, 420 mares were bred to Massachusetts stallions, and an estimated 200 mares were bred to out-of-state stallions. Currently, there are 66 stallions registered with the Massachusetts Department of Food and Agriculture.

The improvements taking place in the Thoroughbred Breeding Program benefit not only the breeders, owners and stallion owners, but various other sectors of Massachusetts. People from all age groups and backgrounds are provided with many different job opportunities. Labor tasks, management positions, lumber, feed, machinery and hardware supplies, and blacksmith and veterinary services all are aspects of the far-reaching and still expanding Massachusetts Thoroughbred Breeding Program.

STANDARDBRED BREEDING PROGRAM

Robert Bennett, Supervisor

The Massachusetts Standardbred Breeding Program supports and promotes the expansion of the number of farms, acreage and standardbred horses bred in the Commonwealth of Massachusetts.

Our current census shows 80 farms and 6,000 acres of farmland dedicated to the breeding of Standardbred horses.

Through this program, therefore, Massachusetts is provided with spacious, open lands which enhance its agricultural base.

Under Chapter 580 of the Acts and Resolves of 1985, funding for the Standardbred Program was increased from one half of one percent to a full one percent of the total handle at Foxboro Raceway, subject to appropriation. The industry added $70,000.00 from sustaining and entry fees. At Foxboro, Massachusetts-bred Standardbreds compete in restricted, parimutuel betting races.

In fiscal 1986, Massachusetts spent a total of $362,000 on the promotion of Standardbred farms. Some 320 Standardbred horses were bred and 66 stallions were registered with the Department of Food and Agriculture and the Massachusetts Standardbred Breeders and Owners Association.

The Department of Food and Agriculture registered 262 yearlings with the Sire Stakes program in FY '86. Sire Stakes races feature two and three year old foals of mares bred to a stallion registered with the Department of Food and Agriculture and the Massachusetts Standardbred Breeders and Owners Association

In FY 1986, Sires Stake races were held at six fairs, with 80 pacers and 20 trotters competing. A total of 120 races took place at Foxboro and the six fairs.

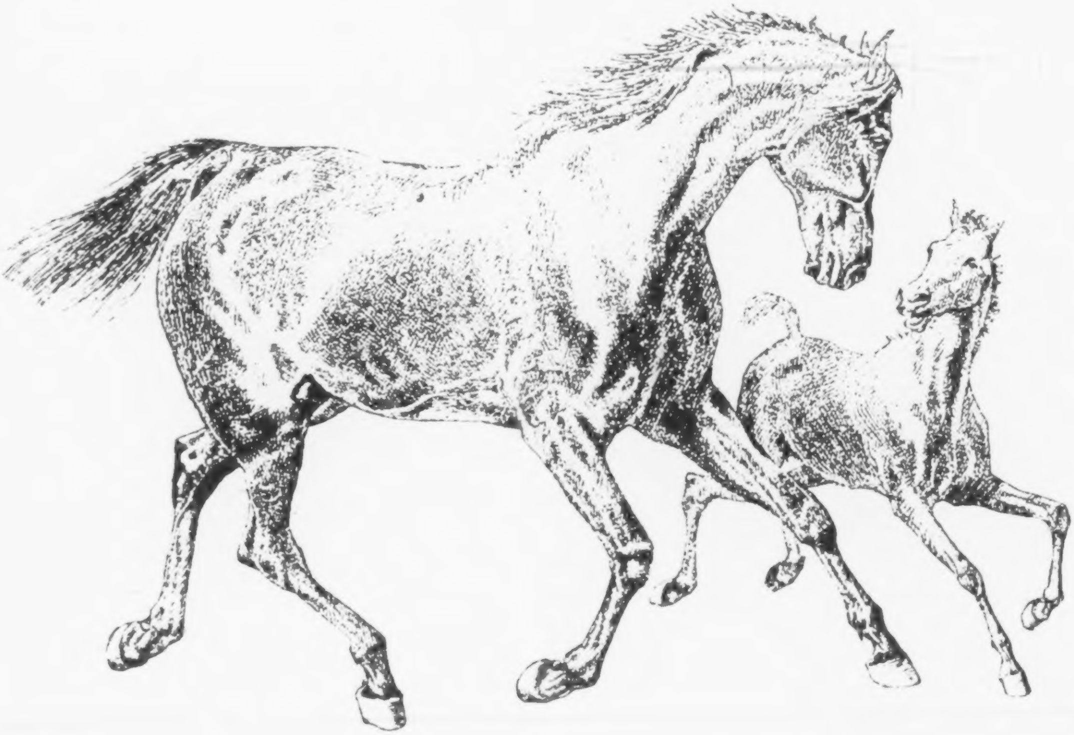
Standardbred farmers gain income from the daily fee paid them by the owners of mares brought to their stallions for breeding. There also is a breeding charge paid to the stallion owner by the owner of the mare. Finally, the Standardbred farmer has a great opportunity for income through the breeding of his own mares and the subsequent selling or racing of the offspring.

The growth and encouragement of the Massachusetts Standardbred Breeding Program is not only beneficial to Massachusetts residents who choose to own a standardbred farm, but to all residents of the state. Standardbred breeding farms help create open spaces of plush, fertile farmland which are both scenic and functional. The operation of farms requires labor, management and care and thus creates job opportunities otherwise unavailable.

And as the Standardbred Program grows, so will the need for hay. Therefore, many of the state's struggling dairy farmers will be able to supplement their income by growing and selling their crops of hay.

As a result of the hard work of the Massachusetts Standardbred Breeding Program, the state's Sires Stakes Program was chosen by the New England Harness Writers to receive its 1986 President's Award. This prestigious award is given by the harness writers of New England to an individual or group that has made a significant contribution to harness racing.

The Standardbred Agricultural Fair and Breeding Fund Committee, in conjunction with the Commissioner of Food and Agriculture, continue to pursue new ideas and possible improvements for the rapidly growing Massachusetts Standardbred Breeding Program.



DIVISION OF FAIRS

Stephen F. Quinn, Director

The growth and prosperity which Massachusetts has enjoyed in recent years has helped breathe some new life into the state's agricultural fairs. More and more people are turning out at fairs throughout the state.

At the Eastern States Exposition in West Springfield alone, an all-time high total of 1,109,220 people came through the gates. They were drawn by 12 straight days of beautiful weather and the prospect of seeing the many new exhibits and events featured at Big E 1986.

Fairs all over the state enjoyed brisk business and are looking forward to even stronger showings in the coming years.

Among the other highlights and developments on the fair circuit last year:

WOOL

The Division continues to work with the Massachusetts Wool Board, and after a successful year of selling off the inventory, we are once again forging ahead with the production of all the good wool into marketable blankets. The Association has entered into the production of sausage and are optimistic about the new product's chances of increasing profits from the sale of older sheep.

The annual meeting featured a guest speaker from England, Mr. James Mugford of Deptford, South Devon. He spoke about his 200 acre farm and 300 head commercial flock. He grows most of his feed and does custom work for neighbors. His crop rotation and feeding program was of great interest to those attending and the question and answer period was of great value.

RACING

The two remaining racing fairs in the state, Northampton and Marshfield, were the focus of a Massachusetts Society for the Prevention of Cruelty to Animals (MSPCA) study. Meetings over the winter months with the Department of Food and Agriculture, the Racing Commission and the MSPCA alleviate many of the problems cited.

The Great Barrington Fair continues without racing dates. A new group of Directors have taken control of the Fair Association and have improved the fair considerably.

Berkshire County Fair and the Weymouth Fair were not held last year.

EASTERN STATES EXPOSITION

The state exhibit at the Big E was well received with new exhibits including the Massachusetts Tree Wardens Association, Hancock Shaker Village, The Massachusetts Board of Library Commissioners, The Massachusetts Army National Guard and an expanded exhibit from the Farmers' Market Federation. The Exposition enjoyed another great show with 12 days of excellent weather and over 1 million visitors.

The Department of Capital Planning has completed its study of the Massachusetts Building and the new roofs and painting was completed by the opening of the Exposition.

The Adopt-a-State-Building program, initiated by the Governor's Office, will include the Massachusetts Building at the Exposition. The Western Massachusetts Nurserymen's Association will be planting new shrubs and flower beds which will certainly enhance our construction project.

OTHER ISSUES

The insurance dilemma continues to harass all fairs regardless of size. Although no fairs were canceled, many fairs were forced to increase their admission price. All are trying to reduce risk factors to keep cost down in the future.

Last winter's meetings included preparations for a new State Grange Fair and exhibits for the Eastern States Exposition. The International Association of Fairs and Expositions Zone One meeting was held in Merrimack, New Hampshire, and featured workshops on agriculture and innovative ideas on promotion.

Forty fairs requested $416,800 in rehabilitation funds, and the Rehabilitation Committee approved an allotment of $100,450. The priorities of the committee were the new sheep barn for Barnstable County Fair, Bolton's new cattle barn and the new amateur Horticultural Exhibit area for the Boston Flower Show.

The Division, along with the University of Massachusetts Extension and the Fair Association conducted workshops for new fair secretaries, fair inspectors and flower judges.

The Division published and disseminated over 40,000 fair brochures. Due to the update of our office equipment we were able to have the printing completed a month earlier than was possible in the past.

The Division was assisted by ten part-time well-trained fair inspectors. We are hoping to have our new inspection reports printed and in use by late summer.

Agricultural prizes totaled $315,859 and were drawn from a total appropriation of $643,943. There were 74,442 exhibits on display, up from 67,465. Attendance is reported at 3,597,726.

SAVING MASSACHUSETTS FARMLAND

this land is your land

WOODY GUTHRIE, in his classic folk anthem, "This Land Is Your Land", celebrates the powerful bond which exists between the American people and the land on which we work and live.

Massachusetts farmers well understand the truth of Guthrie's words. For generations, they have struggled to spare their precious farmland from the poorly planned checkerboard and strip developments which have marred the Massachusetts landscape. Against odds, these farmers are determined to hold on to our state's rich agricultural heritage.

Their concern is justified. From more than 2 million acres farmed in 1945, Massachusetts now is down to just over 600,00 acres. That's nearly 1½ million acres of valuable farmland which have been sacrificed forever to industrial parks, condominiums, residential developments and shopping malls.

* * * *

While factories and houses and malls are a necessary part of our lives, there's no reason that they have to be built on prime agricultural soils and beautiful open spaces. With some creative planning, we can have our farms and our condos, too.

Just ask Sunderland dairy farmer Jim Williams, Sr., whose family has been harvesting crops and raising cattle on the Mount Toby Farm in this Pioneer Valley town for more than 200 years. Though his family technically owns the property, Williams prefers to think of himself as the steward of that soil - and not its sole proprietor.

"I think everybody owns the land, and we don't have the right to destroy it," says Williams, "It's really a crime to see one person who owns a lot of land put buildings on it and destroy it forever. Forever is a long time."

WILLIAMS KNOWS about forever. Mount Toby Farm last year became one of 205 Massachusetts farms - spanning more than 18,000 acres of farmland - which will stay in farming forever under the state's Agricultural Preservation Restriction (APR) program.

* * * *

As the new year began, we were looking forward to working with the Legislature on securing additional funds that would keep this important program running. We're fortunate to have the enthusiastic backing of many lawmakers, farmers, environmentalists and others.

The general public's support of our farmland preservation goals also has been overwhelming. Clearly it's in the interest of everyone - not just farmers - to see the program continue. There are many reasons for that:

- Massachusetts family farms keep thousands of acres of land carefully cultivated, supplying our supermarkets and restaurants with fresh, high-quality, low-chemical food. The rising popularity of roadside stands, farmers' markets and pick-your-owns points to an enormous consumer demand for food that is fresher, safer and closer.

- Massachusetts family farms supply our expanding food-processing industry with top-quality raw products, creating thousands of jobs at such companies as Ocean Spray, Veryfine, Oxford Pickle, Hood Milk and the New England Country Dairy.

- Massachusetts family farms are an integral part of the state's environmental scheme.

- Massachusetts family farmers are just as important as the fields they sow. They are active citizens of our communities.

TO LET our farmland slip away unnoticed, therefore, would be to unravel the fabric of our Massachusetts heritage. We would be denying ourselves many of the taken-for-granted benefits which make Massachusetts so liveable.

As the state's farmland protection program has evolved, so have newer and more creative approaches to stretching the state's dollars. Many cities and towns are drafting creative zoning laws and contributing matching funds to the program.

Private groups such as the Massachusetts Audubon Society, the Kestrel Trust, the American Farmland Trust, the Trust for Public Lands, the Berkshire Natural Resources Council and former Food and Agriculture Commissioner Fred Winthrop's Trustees of Reservations also are heavily involved in the effort to rescue our farmland.

ONLY THROUGH the combined resourcefulness of the state and its people can Massachusetts continue to build a program which offers such vast public benefits at a relatively low cost to taxpayers.

Woody Guthrie saw it so clearly. This land is our land, he reminded us. It's our land to save for ourselves and for future generations. No one else is going to do it for us.

INTEGRATED PEST MANAGEMENT

The New Botany in Massachusetts

THERE WAS NEVER a time when Great Barrington farmer Daniel Tawczynski, who operates Taft Farms at the food of Monument Mountain, thought the answers to all of his pest-control problems could be found in pesticides. He read the labels on the pesticide containers, applied no more and no less than prescribed, and then crossed his fingers.

After years of spending much of his hard-earned money on costly chemicals, it occurred to Dan that there must be some other way. So he gradually reduced the amount of pesticides he was applying. He took a gamble that a balanced combination of chemicals, natural predators and other biological controls, when used in a program of crop rotation and other sound farming techniques, would keep his crops healthy and plentiful.

* * * *

The gamble paid off.

Dan may not have realized it at the time, but the common-sense system he was using on his own farm was emerging as one of the leading pest-control methods in the agricultural industry.

It is called Integrated Pest Management (IPM), a system which combines all pest-control techniques, both chemical and non-chemical, to keep pest populations below a certain economic threshold - the level at which they seriously threaten crops.

IPM operates on the principle that by targeting chemicals and non-chemical pest-control techniques to specific pest populations, farmers can substantially reduce the need for pesticides. It is the system through which we in Massachusetts hope to reduce the use of the most toxic agricultural pesticides by nearly 50 percent by 1995, saving farmers thousands of dollars.

DAN IS ONE of a growing number of farmers in Berkshire County and throughout Massachusetts who have become true believers in the principles of IPM. He didn't use any pesticide on his 80 acres of sweet corn last year, a far cry from the days when he was spraying those crops once a week.

What's more, when Dan's special IPM corn was ready for market last summer, it had no more bugs and worms than other corn which had been treated with pesticides. But Dan had a different selling point, one which proved attractive to chemical-conscious consumers: His corn was pesticide-free.

Dan's success with his sweet corn is a dramatic illustration of what can be accomplished through IPM. The fact is, there is a need - and probably always will be a need - for chemical pesticides. After all, there are more that 700 species of insects and 1,800 varieties of weeds which threaten our crops in this country, and we can't expect to combat that size of an army without some help from pesticides.

Integrated Pest Management is not some sort of magical cure, But by integrating biological, chemical, botanical, physical and other pest-control techniques, we can substantially reduce our dependency on pesticides.

Farmers must learn to read leaves as carefully as they read pesticide labels. They must become botanists. If the leaf says, "I don't need to be sprayed right now," the IPM farmer doesn't spray. Pesticides should be used as the last line of defense, not the first.

MASSACHUSETTS has been a pacesetter in the acceptance and use of IPM. The Cooperative Extension Service at the University of Massachusetts in Amherst, along with the Pesticide Bureau of the Massachusetts Department of Food and Agriculture, has developed a comprehensive program of teaching farmers how to use IPM.

In the past two years, our IPM project for Massachusetts sweet corn has brought an average drop of 49 percent in pesticide use by participating farmers. Dan Tawczynski, obviously, is at the upper end of that scale.

During the seven years in which our IPM program for apples has been in progress, participating growers on some 2,500 acres of apple orchard have reduced their use of insecticides, fungicides and other pesticides by an average of 35 percent.

Potato farmers involved in our IPM project have seen reductions of up to 40 percent.

And some of our Massachusetts cranberry growers, who make up one of the largest, fastest growing industries in the state, have reduced their pesticide use by about 25 percent in the past few years.

We also are developing IPM programs for other fruits and vegetables. Our goal is to reduce the use of the most toxic pesticides by 25 percent by 1990, and by an additional 15 to 20 percent by 1995.

The environmental and economic advantages of IPM clearly make it a program worth saving. Not only does it cut down on the use of chemicals which can harm our environment, but it saves farmers a lot of money which they can funnel into other aspects of their operations.

It's simply good business sense.

THE FRESH CONNECTION

an innovative new program connecting growers and restauranteurs

The Fresh Connection

Volume 1 No. 4

December 1986

Massachusetts Department of Food and Agriculture

MORE SPECIAL EVENTS CLOSE OUT THE YEAR

The "Fresh Connection" newsletter, one of the first of its kind in the U.S., is part of a new promotional project at the Department. Designed to help local growers find new markets, the program is also helping to improve communication between local producers and restaurant chefs.

This is the first time the Department has truly concentrated a major promotional effort towards restaurants. And since Massachusetts restaurants generated more than 5 billion dollars in sales in 1986, this market looks promising to local growers. In fact, "dining out" is on the rise with up to 40 percent of all meals being eaten away from home.

Many Massachusetts farmers are looking for new markets and want to serve the restaurant segment. And, many Bay State chefs want quality, fresh products to regionalize and vary their menu.

Publicity from the "Fine Foods of Massachusetts" dinner in February prompted inquiries from other chefs who had been searching for fresh local food sources. At a subsequent meeting in March hosted by the Department, several area producers and chefs explored some of the issues involved to bring them together.

That contact put the Department in a position to become a clearinghouse for information. By starting up the "Fresh Connection" program, it was possible to branch out communication with both restauranteurs and growers.

At the heart of the "Fresh Connection" program is a newsletter, developed and produced in the Department's Public Information Office by three staff members.

Both growers and restaurants are featured in the newsletter, published every other month. The "Fresh Connection" newsletter consists of articles featuring products and the producers determined to start up or increase their restaurant business.

Also highlighted are restaurants which feature regional cuisine or would like to contract or sell to local producers.

The "Also Available Now" section of the newsletter lists producers with their products, and contact information. A survey to identify producers interested in working with restaurants and their crops was included in the initial newsletter last June. Brochures describing cider mills, farmstead cheese producers, egg producers, orchards, and specialty gifts are included in newsletter mailings.

A new section has been added to the newsletter showcasing a local chef with menu ideas and recipes that highlight Massachusetts commodities.

Of the 950 recipients, some 50 percent are producers and growers, 45 percent are chefs and about 5 percent are involved with the media or education.

A seminar featuring professors from state culinary schools and interested farmers is on the drawing board. Many restaurants from the western part of the state are being added to the mailing list as the newsletter becomes more regionalized.

To promote the use of Massachusetts' variety of high quality fresh and commercially processed foods, linking restaurants to producers, roadside farmstands and farmers markets will continue to be a priority of the "Fresh Connection" project.

In order to meet the needs of large producers and grower cooperatives, the Department's "Fresh Connection" is beginning to work with larger volume restaurants, hotels and institutions.

SPECIAL EVENTS

11 Wednesday
September
1985

FIRST ANNUAL TOMATO FESTIVAL
Lawrence

(right) Commissioner August Schumacher, Jr. (left), Sr. Regina and Commissioner James Gutensohn of the Department of Environmental Management load tomatoes onto truck to be taken to local food shelters.

August 1986

S	M	T	W	T	F	S
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3	4	5	6	7	8	9
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17	18	19	20	21	22	23
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31						

October 19

S	M	T	W	T	F
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5	6	7	8	9	10
12	**13**	14	15	16	17
19	20	21	22	23	**24**
26	27	28	29	30	**31**

18 Friday
October
1985

LANCASTER OFFICE OPENING AND CIDER TASTE-OFF
Lancaster

(left) State legislators and officials cut the ribbon, officially opening the Department's Lancaster office.
(below) Judges and winners of the cider taste-off.

October 1986

S	M	T	W	T	F	S
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20	21					

Novembe
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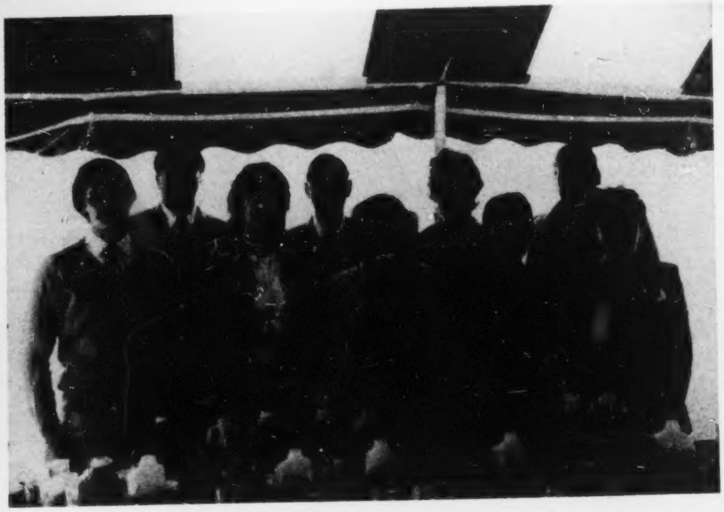

SPECIAL EVENTS

11 Tuesday February 1986

FINE FOODS OF MASSACHUSETTS DINNER

Charles Hotel, Cambridge

(right) Chef Walter Zuromski addresses invited guests. **(center)** The main course: lamb with goat cheese and roasted quail. **(bottom)** Jeff Landin of Shaw's Supermarkets accepts a certificate of appreciation from Alan Wilson and Guy Paris.

S	M	T	W	T	F	S
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23	24	25	26	27	28	29
30	31					

Massachusetts grown ... and freshert

SPECIAL EVENTS

7
Friday
March
1986

FLOWER SHOW PREVIEW PARTY
Bayside Expo. Center, Boston

(left) Beekeepers Fred Magee and Lynn Lees offer samples of honey products to guests. **(below)** Members of the Mass. Lamb and Wool Board and the Mass. Flower Growers Assoc. exhibit their products.

ebruary

Mass. Lamb & Wool Board, Inc.
Mass. Flower Growers Assn.

Wednesday
April
1986
2

LEGISLATIVE APPRECIATION DAY
State House, Boston

(right) Commissioner August Schumacher, Jr. thanks members of the Future Farmers of America for their help in assembling baskets of Massachusetts products and distributing them to legislators.

March 1986

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May

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25	26	27	28	29

SPECIAL EVENTS

16 Wednesday April 1986

NORTHEAST FOOD AND BEVERAGE SHOW

Bayside Expo. Center, Boston

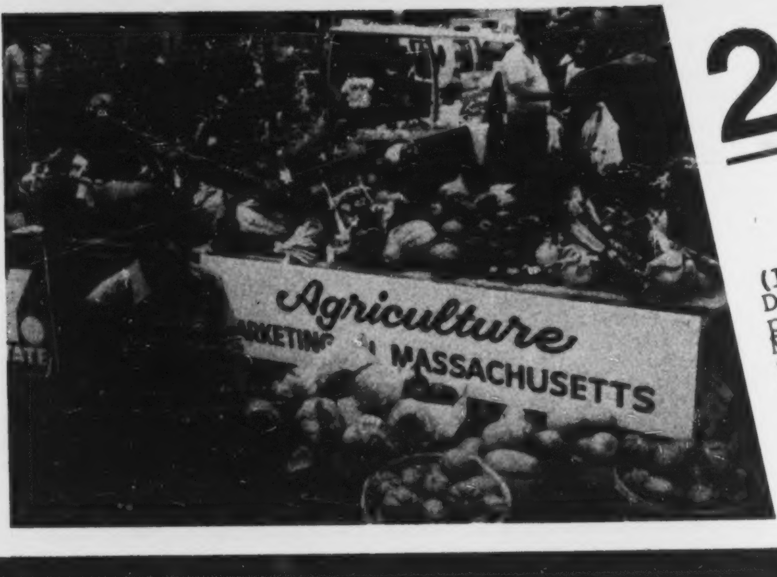
(right) Ned Blake, Nashoba Valley Winery, exhibits their selection of wines.

(below) Janet Christensen, Public Information Officer for the Department, was on hand to answer questions at the Department's booth.

March
1986
S M T W T F

MASSACH
OF FOO
NASHOBA
VALLEY

MASSACHUSETTS DEPARTMENT
OF FOOD & AGRICULTURE
Massachusetts


Agriculture
ARKETING
MASSACHUSETTS

24 Wednesday September 1986

GREENMARKET TASTE-OFF

New York City

(left) Charles Touchette of the Department was one of several people that represented Massachusetts in a produce taste-off between New York, New Jersey, and Massachusetts.

August 1986

S	M	T	W	T	F	S
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24	25	26	27	28	29	30
31						

October 1986

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19	20	21	22	23	**24**	25
26	27	28	29	30	**31**	

SPECIAL EVENTS

3 Tuesday
June
1986

4 **5**

JUNE DAIRY FESTIVAL
Boston Common

(right) George Cross of Milk Promotion Services and Assist. Commissioner, Charles Costa.
(center) Employees of West Lynn Creamery serve samples.
(bottom) Charles Costa, Frank Benson, President of Bailey's Ice Cream, and Boston Mayor, Raymond Flynn.

May 1986

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25	26	27	28	29	30	31

July 1986

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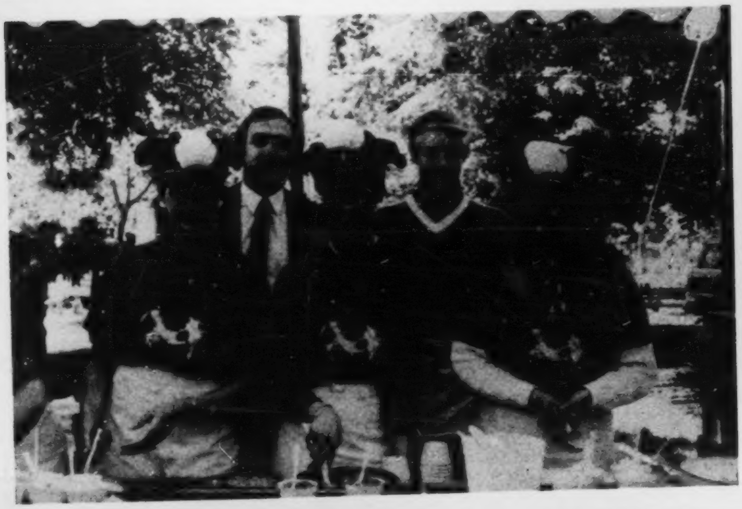
20	21	22	23	24	25	2
27	28	29	30	31		



SPECIAL EVENTS

TOMATO FESTIVAL

20 Wednesday
August
1986

SECOND ANNUAL TOMATO CONTEST
Quincy

(above) Quincy senator Paul Harold awards first prize to Peter Field of Tower Hill Farm.
(right) Phyllis Hanes, Christian Science Monitor, judges entries.
(bottom left) Judges and contestants.
(bottom right) Judges inspect entries.

tember 1986

SPECIAL EVENTS

22 Wednesday October 1986

23

24

nited Nations Day

APPLE HARVEST FAIR

Faneuil Hall Mktpl., Boston

(**clockwise from top left**) Activities included an apple variety exhibit by James Cassidy, Dept. apple expert, cider pressing demonstration by John Lee of Allandale Farm, giant pumpkin auction hosted by Tom Kennedy of WHDH, and an apple pie contest.

September 1986

November 1986

S	M	T	W	T	F	S
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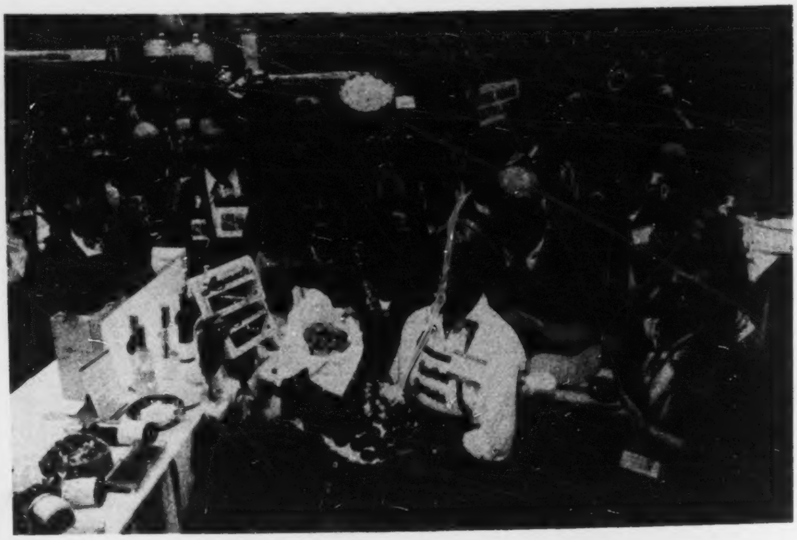
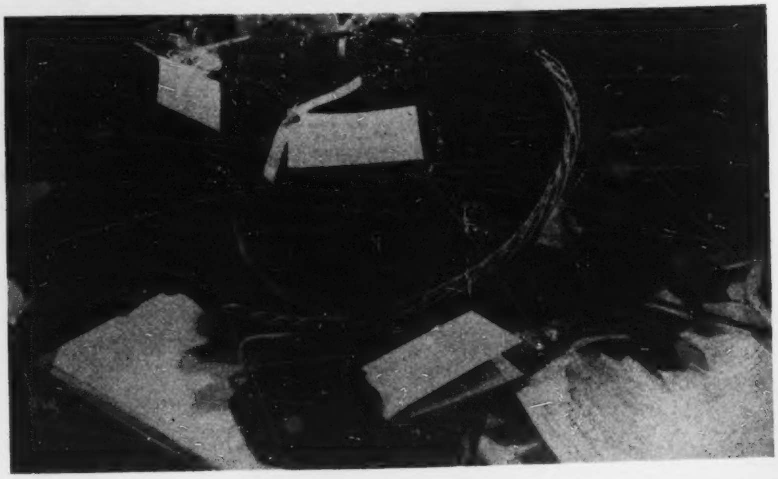
				20	21	22

To be auctioned

SPECIAL EVENTS





2

Sunday
November
1986

1986

3

Monday
November
1986

4

Tuesday
November
1986

GOURMET FOOD SHOW
New York City

(**top**) Exhibitors in the Massachusetts booth display their products.
(**center and bottom**) A closer look at some of the featured Massachusetts products - specialty vinegars and teacakes.

			1986	
T	W	T	F	S
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8	29	30	31	

December						1986
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21	22	23	24	25	26	27
28	29	30	31			

HIGHLIGHTS

a facts-and-figures glance at Massachusetts agriculture

While Massachusetts agriculture is a relatively small notch in the broader spectrum of American agriculture, it nevertheless serves an important role in the economic vitality of the state and the region.

The Commonwealth's highly diverse agricultural sector embraces everything from nurseries, greenhouses, cranberry bogs, beehives and vineyards to apple orchards, cider mills, horse farms, dairies, vegetable fields and many other types of farming.

So varied is our farm-and-food industry that it becomes difficult to get a complete handle on its full scope and value. The U.S. Census Bureau and the New England Crop Reporting Service of the U.S. Department of Agriculture have been a dependable source of data and analysis. We will continue to work with both to get a clear and accurate picture of agriculture in Massachusetts.

To improve our understanding, the Massachusetts Department of Food and Agriculture has initiated its own, complementary data-collection program. The facts and the figures we gather gradually will be transformed into a reliable computerized data base.

The more precise our data, the better our public policymakers are equipped to make informed decisions.

In that way, the marketing, promotional and regulatory programs enacted by our lawmakers will continue to reflect the strengths and meet the needs of Massachusetts agriculture.

What we've included in this Annual Report is only a partial sampling of the larger data base we will be presenting in future reports.

The tables which follow are designed to acquaint our readers with some of the more interesting - perhaps even surprising - aspects of our proud agricultural industry in Massachusetts.

-- THOMAS GALLAGHER
State Agricultural
Statistician

Massachusetts Vegetable Production by County

COUNTY	VEGETABLE ACRES PLANTED	GROWERS	MAJOR VEGETABLES
EASTERN MASSACHUSETTS			
Barnstable	139	15	corn, tomatoes
Bristol	2468	120	corn, butternut squash, peppers
Dukes	71	5	corn, carrots
Essex	1642	69	corn, beans, lettuce, spinach
Middlesex	2933	107	corn, butternut squash, beans, pumpkins
Nantucket	109	3	corn, lettuce
Norfolk	453	28	corn, pumpkins, tomatoes
Plymouth	1573	78	corn, butternut squash, pumpkins
Suffolk	11	1	corn
Worcester	2117	105	corn, butternut squash, pumpkins
TOTAL EASTERN MASSACHUSETTS	11,524	531	
WESTERN MASSACHUSETTS			
Berkshire	454	19	corn, potatoes, pumpkins
Franklin	2116	51	potatoes, corn, cucumbers, cabbage
Hampden	2165	73	corn, cabbage, potatoes, carrots
Hampshire	4701	127	potatoes, corn, cucumbers
TOTAL WESTERN MASSACHUSETTS	9445	270	
TOTAL MASSACHUSETTS	20,960	801	average per grower: 26.17 acres

Massachusetts Vegetable Production Acreage (1985)

VEGETABLES	TOTAL ACRES PLANTED	COUNTIES WITH LARGE CONCENTRATIONS
sweet corn	8848	Middlesex, Worcester, Plymouth
potatoes	3500	Franklin, Hampshire
butternut squash	1269	Middlesex, Bristol
cabbage	732	Hampden, Bristol
pumpkins	717	Middlesex, Plymouth, Worcester
beans	683	Middlesex, Essex
cucumbers	480	Hampshire
peppers	690	Bristol
lettuce	517	Middlesex, Essex, Hampden
tomatoes	590	Bristol, Hampden
other squash	410	all counties
carrots	294	Hampden
yellow squash	211	all counties
zucchini squash	210	all counties
spinach	202	Essex, Middlesex
cauliflower	178	Hampden, Franklin, Hampshire
peas	173	Middlesex, Essex, Plymouth Bristol, Norfolk
onions	172	Hampshire, Franklin
melons	145	Hampden, Hampshire
broccoli	138	Hampden
greens	119	Essex, Middlesex, Bristol
beets	118	Essex, Middlesex, Plymouth
asparagus	100	Hampshire
turnips/rutabagas	93	Plymouth
TOTAL	20,960	

source: Massachusetts Department of Food and Agriculture
Statistical Section

MASSACHUSETTS 1986 GREENHOUSE INDUSTRY BY COUNTY

COUNTY	GREENHOUSE ESTABLISHMENTS	COMMUNITIES W/ GREENHOUSES	SQUARE FEET UNDER GLASS AND PLASTIC
WESTERN MASSACHUSETTS			
Berkshire	23	9	164,700
Franklin	19	8	82,500
Hampshire	27	7	817,200
Hampden	56	15	932,085
TOTAL	**125**	**39**	**1,996,485**
EASTERN MASSACHUSETTS			
Essex	69	24	660,720
Middlesex	120	49	4,127,200
Norfolk	79	25	975,920
Worcester	93	38	4000
Bristol	70	16	774,931
Plymouth	66	20	855,540
Barnstable	12	6	149,800
Dukes	5	2	30,000
Nantucket	3	1	50,000
TOTAL	**525**	**181**	**8,590,644**
TOTAL STATE	650	220	10,587,129

average per grower: 16,287.89 sq. ft.

MASSACHUSETTS 1986 DISTRIBUTION OF NURSERIES

COUNTY	COMMUNITIES WITH NURSERIES	NURSERY OPERATIONS	ACRES IN NURSERY STOCK
WESTERN MASSACHUSETTS			
Berkshire	10	17	101
Franklin	8	12	251
Hampshire	9	23	91
Hampden	12	30	309
TOTAL	**39**	**82**	**752**
EASTERN MASSACHUSETTS			
Worcester	22	29	426
Middlesex	21	32	761
Essex	12	16	337
Suffolk	1	1	6
Norfolk	19	39	152
Plymouth	19	20	117
Bristol	17	39	202
Barnstable	9	18	55
Dukes	1	3	2
Nantucket	1	1	1
TOTAL	**122**	**208**	**2059**
TOTAL STATE	159	290	2811

Massachusetts Cider Production, 1985

monthly production, consumption, and wholesale price

MONTH	FRESH CIDER PRODUCTION (gallons)	PASTEURIZED CIDER PRODUCTION (gallons)	FRESH/PAST. CONSUMPTION (gallons)	WHOLESALE PRICE (per gallon)
Jan.	205,600	50,000	255,600	1.60
Feb.	176,200	50,000	226,200	1.60
March	146,800	50,000	196,800	1.60
April	117,500	50,000	167,500	1.80
May	88,100	25,000	113,100	2.00
June	58,700	50,000	108,700	
July	-	-	-	-
Aug.	90,400	125,000	215,400	
Sept.	176,200	150,000	326,200	1.70
Oct.	347,300	175,000	522,300	1.70
Nov.	352,500	175,000	527,500	1.65
Dec.	235,000	125,000	360,000	1.65
TOTAL	1,994,300	1,025,000	3,019,300	

TOTAL WHOLESALE VALUE: $4,981,845

Massachusetts Fresh Cider Production by County *

COUNTY	CIDER MILLS	COMMUNITIES WITH MILLS	PRODUCTION (gallons)
WESTERN MASSACHUSETTS			
Berkshire	8	6	47,500 (4)
Franklin	6	6	90,300 (2)
Hampshire	9	7	182,500 (4)
Hampden	7	6	285,000 (2)
TOTAL	30	25	605,300 (12)
EASTERN MASSACHUSETTS			
Worcester	19	11	828,500 (4)
Middlesex	16	11	386,500 (6)
Essex	8	5	124,000 (3)
Norfolk	2	2	- (2)
Plymouth	2	2	20,000
Bristol	6	4	31,000 (2)
Barnstable	1	1	- (1)
TOTAL	54	36	1,390,000 (18)
TOTAL STATE	84	61	1,995,300 (30)

() mills from which production figures were not available

* of nearly 2 million gallons of fresh cider produced, 33 percent was pressed from Massachusetts grown apples.

MASSACHUSETTS 1986 HORSEBACK RIDING SCHOOL SURVEY

distribution by breed and county
based on data from 130 active riding schools

BREED COUNTY	Grade	Thorough bred	Ponies	Quarter Horse	Morgan	Appaloosa	Arabian	All Other	COUNTY TOTAL	SURVEY TOTAL
Barnstable	56	44	32	25	12	11	1	23	204	
Berkshire	81	15	21	12	3	3	5	9	149	
Bristol	78	30	17	7	6	1	21	7	167	
Essex	119	59	29	11	19	3	3	11	254	
Franklin	23	10	15	12	11	11	12	24	118	
Hampden	31	6	10	0	3	8	5	7	70	
Hampshire	0	0	0	2	0	1	0	1	4	
Middlesex	148	109	69	44	2	17	9	62	460	
Norfolk	124	45	31	39	22	4	4	43	312	
Plymouth	94	60	49	18	17	15	6	25	284	
Worcester	52	24	31	12	8	5	7	13	152	
TOTAL	806	402	304	182	103	79	73	225		2174
% OF TOTAL SURVEY	7.1	18.5	14.0	8.4	4.7	3.6	3.4	10.3		100

Massachusetts 1986 Distribution of Horses and Ponies by County

total count and distribution

COUNTY	HORSES	PONIES
EASTERN MASSACHUSETTS		
Essex	3218	348
Middlesex	3363	357
Worcester	3839	563
Norfolk	3135	232
Suffolk	1561	2
Bristol	1774	307
Plymouth	1363	383
Barnstable	635	98
Dukes	173	97
Nantucket	46	18
TOTAL	19,107	2,405
WESTERN MASSACHUSETTS		
Franklin	1464	177
Hampshire	1494	142
Hampden	1143	168
Berkshire	1147	208
TOTAL	5,248	695
TOTAL STATE	24,355	3,100

MASSACHUSETTS DEPARTMENT OF FOOD AND AGRICULTURE

AUGUST SCHUMACHER, JR., COMMISSIONER

100 CAMBRIDGE STREET

BOSTON, MASSACHUSETTS 02202

(617) 727-3000

UNITED STATES DEPARTMENT OF AGRICULTURE

RICHARD E. LYNG, SECRETARY

STATISTICAL REPORTING SERVICE

NEW ENGLAND CROP AND LIVESTOCK REPORTING SERVICE

6 LOUDON ROAD

CONCORD, NEW HAMPSHIRE, 03301

CHARLES W. HAMMOND, AGRICULTURAL STATISTICIAN-IN-CHARGE

ROWLAND R. SCRANTON, ASSISTANT STATISTICIAN-IN-CHARGE

BEVERLY A. LACROIX, ADMINISTRATIVE

STATISTICIANS

RICHARD BLOOD

JOHN KETCHAM

ROBIN RIPPLE

THOMAS VESEY

SUPERVISORY ENUMERATORS

HELEN BARDWELL, HATFIELD

BARBARA MANN, DUXBURY

SUPPORT STAFF

LYNNE ARSENAULT

CAROLYN HANSON

RONI HEBERT

LAWRENCE KELLY

DOLORES MOSS

DOREEN ROLLINSON

JOYCE SUPRY

ADRIENNE ZAPPIA

LIVESTOCK HIGHLIGHTS

INVENTORY

The inventory of cattle and calves in Massachusetts on January 1, 1986 totaled 100,000 head, unchanged from January 1, 1985. This inventory consisted of 47,000 milk cows, 9,000 beef cows, 19,000 heifers 500 pounds and over, 5,000 steers and bulls, and 20,000 calves. The 1985 calf crop of 51,000 head, was 2 percent larger than in 1984. The inventory value on January 1, 1986 averaged $565 per head, unchanged from January 1, 1985. Total inventory value at $56.5 million was unchanged from same time previous year, but was 31 percent below the record high total inventory value on January 1, 1981.

The inventory of sheep and lambs in the Commonwealth totaled 10,000 on January 1, 1986, 1,000 fewer than a year earlier. At an average value of $122 per head, the value of the sheep and lamb inventory was $1.2 million, compared with $1.3 million a year earlier.

The number of hogs and pigs on December 1, 1985 totaled 34,000 head, 15 percent below the number on hand December 1, 1984 and the lowest inventory level on record. The decline was caused by 6,000 fewer pigs held for market as breeding stock numbers were unchanged from the previous December. The total inventory was valued at $3 million, bringing the average value per head to $89, up $10.50 from 1984.

PRODUCTION AND MARKETINGS:

Marketings from Massachusetts farms in 1985 numbered 44,000 head of cattle and calves, at a total live weight of 13.5 million pounds, down 1.37 million pounds from 1984, and the lowest since 1982. The number of cattle marketed was down 3,000 head, while the number of calves marketed was up 7,000 head from a year ago. Price received per cwt. marketed for cattle was $40.00 and for calves $46.00, $2.00 less per cwt. for cattle and $6.00 lower per cwt. for calves than in 1984.

Wool production during 1985 totaled 71,00 pounds, 2,000 pounds less than the previous year. A slightly lower weight per fleece was responsible for the decline, as number shorn remained 10,000 in both years. Value of the wool produced in 1985 was $44,000, down $5,000 from 1984. At 62 cents per pound, the average price received for wool was 5 cents lower in 1985 than in 1984. Production of lamb and mutton in 1985 totaled 699,000 pounds, 13 percent less than in 1984. Marketings for the year totaled 689,000 pounds, and yielded a gross income of $638,000.

The Massachusetts pig crop of [illegible]0,000 head in 1985 was 10,000 less than the 1984 crop and the lowest pig crop on record. Massachusetts pork producers marketed a total of 9.6 million pounds, at an average price of $41 per cwt. This resulted in a gross income of $4.3 million, 9 percent below 1984 and the lowest gross income since 1971.

Mink production in the Commonwealth of 13,900 pelts during 1985 was 1,700 pelts fewer than the 1984 production. Of the pelts produced in 1985, 38 percent were Demi-Buff and 16 percent were Standard, 9 percent were Pastel. Mink bred to produce kits during 1986 is estimated at 3,200 females, down 800 from the 4,000 females bred in 1985.

CATTLE: NUMBER AND VALUE OF ALL CATTLE AND CALVES ON FARMS JANUARY 1, MASSACHUSETTS, 1975 - 1986

YEAR	NUMBER	VALUE	
		PER HEAD	TOTAL
	1,000	Dollars	1,000 Dollars
1975	107	315	33,705
1976	107	345	36,915
1977	104	380	39,520
1978	99	415	41,085
1979	102	560	57,120
1980	104	690	71,760
1981	104	785	81,640
1982	98	800	78,400
1983	103	700	72,100
1984	98	595	58,310
1985	100	565	56,500
1986	100	565	56,500

CATTLE: JANUARY 1, INVENTORY BY CLASSES, MASSACHUSETTS, 1975 - 1986

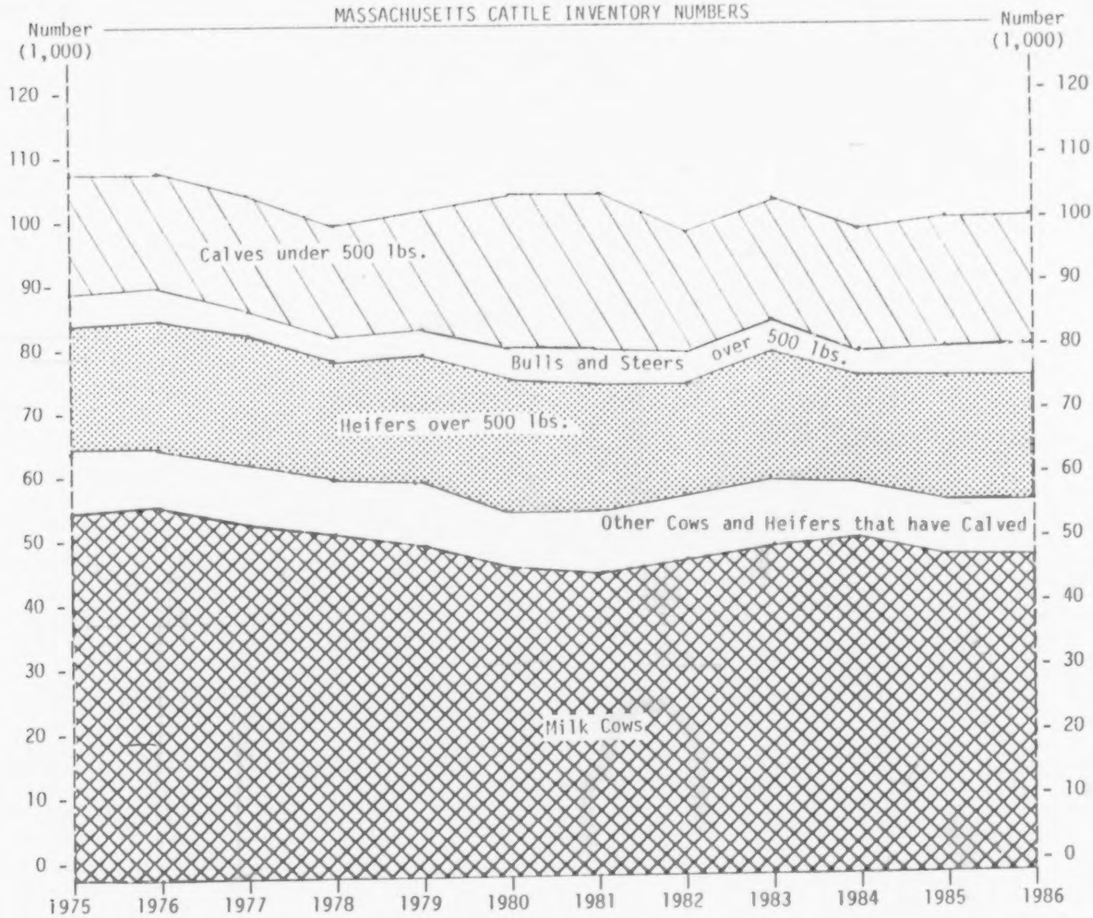
YEAR	ALL CATTLE AND CALVES	COWS & HEIFERS THAT HAVE CALVED		HEIFERS 500 LBS. & OVER			STEERS 500 LBS.+	BULLS 500 LBS.+	STEERS, HEIFERS & BULLS -500 LBS.
				REPLACEMENTS		OTHER			
		BEEF	MILK	BEEF COW	MILK COW				
	1,000								
1975	107	9	54	2	17	1	3	2	19
1976	107	9	55	2	17	1	3	2	18
1977	104	9	53	2	17	1	2	2	18
1978	99	8	51	2	16	1	2	2	17
1979	102	10	49	3	16	1	2	2	19
1980	104	9	46	3	16	1	3	2	24
1981	104	10	45	4	14	1	4	2	24
1982	98	10	47	3	13	1	3	2	19
1983	103	10	49	2	17	1	3	2	19
1984	98	8	50	2	14	1	2	2	19
1985	100	9	47	3	15	1	3	2	20
1986	100	9	47	3	15	1	3	2	20

CATTLE AND CALVES: PRODUCTION AND INCOME, MASSACHUSETTS, 1975 - 1985

YEAR	PRODUCTION	MARKETINGS	PRICE PER 100 POUNDS		VALUE OF HOME CONSUMPTION	GROSS INCOME
			CATTLE	CALVES		
	1,000 Pounds		Dollars		1,000 Dollars	
1975	35,060	27,812	22.40	24.20	925	7,217
1976	33,620	40,230	26.00	28.50	559	11,071
1977	33,240	40,790	26.20	38.20	676	11,591
1978	27,080	26,560	41.90	57.00	1,441	12,846
1979	22,058	21,858	57.00	76.00	1,471	14,258
1980	24,650	22,830	55.00	71.00	1,892	14,651
1981	21,650	21,610	50.00	63.00	1,290	12,424
1982	17,310	9,390	45.00	57.00	1,548	6,022
1983	20,080	22,930	42.00	52.00	1,646	11,483
1984	20,090	14,910	42.00	52.00	1,659	8,137
1985	15,640	13,540	40.00	46.00	1,192	6,775

CATTLE AND CALVES: INVENTORY, SUPPLY AND DISPOSITION, MASSACHUSETTS, 1975 - 1985

YEAR	ALL CATTLE ON HAND JAN. 1	CALF CROP	INSHIPMENTS	MARKETINGS		FARM SLAUGHTER CATTLE & CALVES	DEATHS	
				CATTLE	CALVES		CATTLE	CALVES
				1,000				
1975	107	56	7	32	22	1	2	6
1976	107	55	7	34	22	1	2	6
1977	104	52	7	35	20	1	2	6
1978	99	50	5	23	19	2	2	6
1979	102	47	1	19	18	1	2	6
1980	104	45	1	21	14	1	3	7
1981	104	47	1	20	23	1	3	7
1982	98	48	1	10	23	1	3	7
1983	103	48	1	23	23	1	2	5
1984	98	50	1	16	24	1	2	6
1985	100	51	1	13	31	1	2	5


MASSACHUSETTS CATTLE INVENTORY NUMBERS

HOGS: NUMBER AND VALUE ON FARMS, DECEMBER 1, MASSACHUSETTS, 1974 - 1985

YEAR	NUMBER			VALUE	
	BREEDING	MARKET	TOTAL	PER HEAD	TOTAL
	Head			Dollars	1,000 Dollars
1974	8,000	43,000	51,000	48.00	2,448
1975	8,000	42,000	50,000	64.50	3,225
1976	7,000	43,000	50,000	50.50	2,525
1977	8,000	52,000	60,000	59.50	3,570
1978	8,000	52,000	60,000	76.50	4,590
1979	9,000	51,000	60,000	55.50	3,330
1980	7,000	42,000	49,000	74.50	3,651
1981	6,000	43,000	49,000	79.50	3,896
1982	7,000	39,000	46,000	88.50	4,071
1983	7,000	35,000	42,000	79.00	3,318
1984	5,000	35,000	40,000	78.50	3,140
1985	5,000	29,000	34,000	89.00	3,026

HOGS: PIG CROP, SOWS FARROWED AND PIGS SAVED, MASSACHUSETTS, 1975 - 1985

YEAR	SPRING CROP (DEC - MAY)			FALL CROP (JUN - NOV)			TOTAL PIG CROP
	SOWS	PIGS / LITTER	PIGS SAVED	SOWS	PIGS / LITTER	PIGS SAVED	
	Head						
1975	7,000	6.2	43,000	6,800	5.7	39,000	82,000
1976	6,600	6.8	45,000	5,700	6.5	37,000	82,000
1977	5,000	6.9	35,000	6,500	6.6	43,000	78,000
1978	5,000	7.2	36,000	6,000	6.8	41,000	77,000
1979	6,000	6.5	39,000	6,500	6.5	42,000	81,000
1980	4,000	7.4	30,000	6,000	5.8	35,000	65,000
1981	4,000	6.6	26,000	5,000	6.4	32,000	58,000
1982	3,700	7.5	28,000	4,500	7.6	34,000	62,000
1983	4,900	6.5	32,000	4,000	7.0	28,000	60,000
1984	3,700	6.9	26,000	3,700	6.5	24,000	50,000
1985	3,200	6.2	20,000	3,000	6.5	20,000	40,000

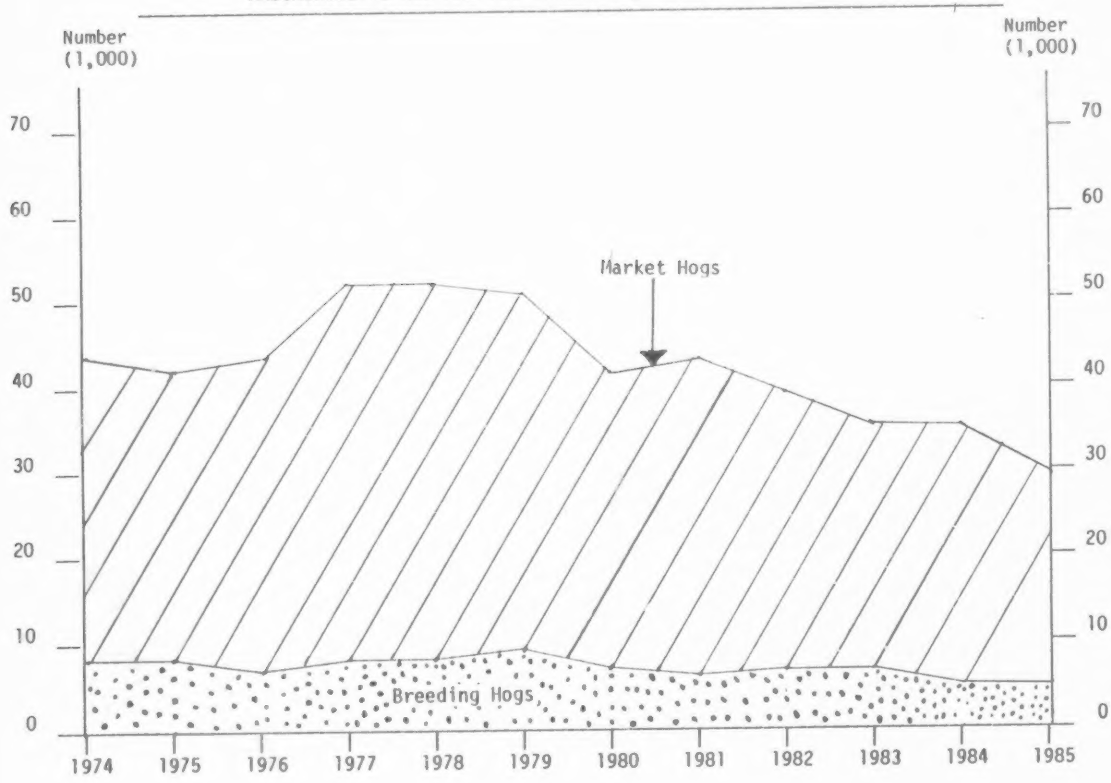
HOGS: INVENTORY NUMBER, PIG CROP AND DISPOSITION, MASSACHUSETTS, 1975 - 1985

YEAR	ON HAND DEC 1st PREVIOUS YEAR	PIG CROP		MARKETINGS	FARM SLAUGHTER	DEATHS
		DEC - MAY	JUN - NOV			
	Head					
1975	51,000	43,000	39,000	78,000	1,000	4,000
1976	50,000	45,000	37,000	75,000	1,000	6,000
1977	50,000	35,000	43,000	61,000	1,000	6,000
1978	60,000	36,000	41,000	71,000	1,000	5,000
1979	60,000	39,000	42,000	76,000	1,000	4,000
1980	60,000	30,000	35,000	71,000	2,000	3,000
1981	49,000	26,000	32,000	55,000	1,000	2,000
1982	49,000	28,000	34,000	61,000	1,000	3,000
1983	46,000	32,000	28,000	59,000	2,000	3,000
1984	42,000	26,000	24,000	49,000	1,000	2,000
1985	40,000	20,000	20,000	42,000	1,000	3,000

HOGS: PRODUCTION AND INCOME, MASSACHUSETTS, 1975 - 1985

YEAR	PRODUCTION	MARKETINGS	PRICE PER 100 POUNDS	VALUE OF HOME CONSUMPTION	GROSS INCOME
	1,000 Pounds		Dollars	1,000 Dollars	
1975	19,100	18,260	45.00	347	8,564
1976	17,891	17,378	45.00	354	8,174
1977	15,832	14,063	37.00	291	5,494
1978	17,211	16,640	45.00	304	7,792
1979	18,640	17,820	44.00	297	8,138
1980	16,412	16,185	37.00	500	6,488
1981	13,267	12,825	43.00	290	5,805
1982	14,547	14,380	54.00	316	8,081
1983	11,651	11,010	42.00	378	5,002
1984	9,745	9,600	46.00	269	4,685
1985	9,836	9,630	41.00	314	4,262

MASSACHUSETTS HOG AND PIG INVENTORY, DECEMBER 1, 1974 - 1985



SHEEP AND LAMBS: INVENTORY NUMBER BY CLASS AND VALUE, JANUARY 1, MASSACHUSETTS, 1975 - 1986

YEAR	LAMBS			ONE YEAR AND OVER		ALL SHEEP & LAMBS	VALUE	
	ALL LAMBS	EWES	WETHERS AND RAMS	EWES	WETHERS AND RAMS		PER HEAD	TOTAL
	Head						Dollars	1,000 Dollars
1975	1,500	1,100	400	5,100	400	7,000	46.50	326
1976	1,500	1,100	400	5,300	400	7,200	46.00	331
1977	1,400	1,000	400	4,900	400	6,700	48.00	322
1978	1,600	1,100	500	4,700	500	6,800	53.50	364
1979	1,300	1,000	300	4,900	500	6,700	63.00	422
1980	2,500	2,000	500	7,000	500	10,000	78.00	780
1981	2,000	1,600	400	6,400	600	9,000	88.00	792
1982	2,600	2,000	600	8,000	400	11,000	109.00	1,199
1983	2,600	2,000	600	7,000	400	10,000	104.00	1,040
1984	2,200	1,700	500	8,000	800	11,000	103.00	1,133
1985	2,400	1,700	700	8,000	600	11,000	121.00	1,331
1986	2,300	1,700	600	7,000	700	10,000	122.00	1,220

SHEEP AND LAMBS: INVENTORY NUMBERS, LAMB CROP AND DISPOSITION, MASSACHUSETTS, 1975 - 1985

YEAR	ALL SHEEP AND LAMBS ON HAND JAN. 1	LAMB CROP	MARKETINGS		FARM SLAUGHTER SHEEP & LAMBS	DEATHS SHEEP & LAMBS
			SHEEP	LAMBS		
	Head					
1975	7,000	5,500	900	2,900	400	1,100
1976	7,200	5,600	1,500	3,300	300	1,000
1977	6,700	5,700	1,100	3,100	400	1,000
1978	6,800	5,300	1,000	2,900	500	1,000
1979	6,700	5,500	800	2,000	500	900
1980	10,000	7,200	2,600	3,800	600	1,200
1981	9,000	7,500	100	3,200	900	1,300
1982	11,000	9,100	3,300	5,200	300	1,300
1983	10,000	8,200	900	5,000	200	1,100
1984	11,000	10,000	2,000	6,500	300	1,200
1985	11,000	8,500	3,000	5,000	500	1,000

SHEEP AND LAMBS: PRODUCTION AND INCOME, MASSACHUSETTS, 1975 - 1985

YEAR	PRODUCTION	MARKETINGS	PRICE PER 100 POUNDS		VALUE OF HOME CONSUMPTION	GROSS INCOME
			SHEEP	LAMBS		
	1,000 Pounds		Dollars		1,000 Dollars	
1975	372	296	26.00	68.00	35	193
1976	382	393	28.00	72.00	35	244
1977	431	357	29.00	72.00	46	244
1978	406	329	38.00	84.00	67	282
1979	474	210	39.00	85.00	82	215
1980	586	573	42.00	77.00	89	416
1981	479	170	45.00	100.00	89	252
1982	602	654	41.00	94.00	68	465
1983	708	465	36.00	93.00	80	453
1984	801	720	36.00	96.00	91	644
1985	699	689	40.00	106.00	135	638

WOOL: PRODUCTION AND VALUE, MASSACHUSETTS, 1975 - 1985

YEAR	SHEEP SHORN	WEIGHT PER FLEECE	SHORN WOOL PRODUCTION	PRICE PER POUND	VALUE
	Head	Pounds	1,000 Pounds	Cents	1,000 Dollars
1975	6,400	7.2	46	31	14
1976	6,700	6.9	46	60	28
1977	6,200	7.1	44	78	34
1978	6,300	6.8	43	74	32
1979	7,000	6.9	48	84	40
1980	9,000	6.9	62	88	55
1981	10,000	6.9	69	90	62
1982	10,000	6.8	68	66	45
1983	11,000	6.9	76	63	48
1984	10,000	7.3	73	67	49
1985	10,000	7.1	71	62	44

MINK: PRODUCTION AND FEMALES BRED TO PRODUCE KITS, MASSACHUSETTS, 1980 - 1986 1/

COLOR CLASS	PELTS PRODUCED					FEMALES BRED TO PRODUCE KITS				
	1980	1982	1983	1984	1985	1981	1983	1984	1985	1986
Standard	1,200	1,700	1,400	2,200	2,200	660	500	560	710	600
Demi-Buff	5,200	4,000	3,900	5,900	5,300	1,000	1,200	2/	1,200	700
Pastel	6,300	1,900	2,300	1,600	1,300	1,000	360	590	470	500
Pearl	2,300	2,800	2/	3,500	2/	700	880	830	880	2/
Others	2,400	2,700	4,900	2,400	5,100	540	760	2,220	740	1,400
TOTAL	17,400	13,100	12,500	15,600	13,900	3,900	3,700	4,200	4,000	3,200

1/ Estimates not available for 1981 production and 1982 Females bred to produce Kits.
2/ Included in others to avoid disclosing individual operations.

DAIRY HIGHLIGHTS

PRODUCTION AND MARKETINGS

Milk production from Massachusetts farms totaled 585 million pounds in 1985, 12 million pounds more than 1984. The average number of milk cows during 1985 was 47,000 head, 1,000 head down from 1984. The 1985 rate per cow of 12,447 pounds increased 509 pounds above the 1984 average.

Dairymen in Massachusetts used 8 million pounds of milk to feed calves and 2 million pounds for home use in 1985. The amount fed to calves and used for home use was unchanged from a year ago. Milk marketed in 1985 totaled 575 million pounds, an increase of 12 million pounds from the 1984 milk marketed. The average price received for milk marketed in 1985 was $14.10 per cwt., down 72¢ from 1984. The decrease in the average average price received for milk more than offset the increase in amount of milk produced resulting in total 1985 cash receipts of $81.1 million, $2.37 million below the 1984 cash receipts, and the lowest since 1980.

MANUFACTURED DAIRY PRODUCTS

A total of 12.8 million pounds of cheese was produced in Massachusetts during 1985, up 9 percent from 1984 production of 11.7 million pounds. Ice cream production totaled 47.0 million gallons, up slightly from the 1984 production. There were 7.44 million gallons of ice milk produced in 1985, down 5 percent from the previous year. Milk sherbet production totaled 1.99 million gallons, 8 percent lower than in 1984.

MILK COWS: AVERAGE NUMBER ON FARMS, BY QUARTERS AND ANNUAL, MASSACHUSETTS, 1975 - 1985

YEAR	JAN - MAR	APR - JUN	JUL - SEP	OCT - DEC	ANNUAL
			1,000		
1975	55	54	54	55	55
1976	55	54	53	53	54
1977	52	51	51	51	51
1978	50	48	48	49	49
1979	49	48	47	46	48
1980	46	46	46	46	46
1981	45	46	47	47	46
1982	47	47	46	47	47
1983	49	49	46	48	48
1984	49	48	47	47	48
1985	47	47	46	47	47

MILK PRODUCTION: AVERAGE PER COW, BY QUARTERS AND ANNUAL, MASSACHUSETTS, 1975 - 1985

YEAR	JAN - MAR	APR - JUN	JUL - SEP	OCT - DEC	ANNUAL
			Pounds		
1975	2,725	2,960	2,720	2,620	10,927
1976	2,735	2,950	2,760	2,700	11,074
1977	2,850	3,060	2,890	2,870	11,706
1978	2,900	3,110	2,920	2,820	11,673
1979	2,920	3,090	2,940	2,980	11,792
1980	3,110	3,240	3,000	3,050	12,391
1981	3,180	3,295	3,020	3,000	12,565
1982	3,190	3,320	3,180	3,185	12,809
1983	3,190	3,245	3,200	3,150	12,771
1984	3,080	3,020	2,880	3,020	11,938
1985	3,100	3,150	3,110	3,150	12,447

MILK PRODUCTION, BY QUARTERS AND ANNUAL, MASSACHUSETTS, 1975 - 1985

YEAR	JAN - MAR	APR - JUN	JUL - SEP	OCT - DEC	ANNUAL
			Million Pounds		
1975	150	160	147	144	601
1976	150	159	146	143	598
1977	148	156	147	146	597
1978	145	149	140	138	572
1979	143	148	138	137	566
1980	143	149	138	140	570
1981	143	152	142	141	578
1982	150	156	146	150	602
1983	156	159	147	151	613
1984	151	145	135	142	573
1985	146	148	143	148	585

MILK: QUANTITY MARKETED, PRICE AND CASH RECEIPTS, MASSACHUSETTS, 1975 - 1985

YEAR	SOLD TO PLANTS			SOLD DIRECTLY TO CONSUMERS			COMBINED MARKETINGS		
	QUANTITY	PRICE PER CWT.	CASH RECEIPTS	QUANTITY	PRICE PER QUART	CASH RECEIPTS	QUANTITY	PRICE PER CWT.	CASH RECEIPTS
	Million Pounds	Dollars	1,000 Dollars	Million Quarts	Cents	1,000 Dollars	Million Pounds	Dollars	1,000 Dollars
1975	555	9.65	53,588	15.8	40	6,326	589	10.17	59,884
1976	550	10.70	58,850	16.7	42	7,032	586	11.24	65,882
1977	550	10.70	58,850	16.7	42	7,032	586	11.24	65,882
1978	530	11.50	60,950	14.9	43	6,400	562	11.98	67,350
1979	525	12.80	67,200	14.4	46	6,633	556	13.28	73,833
1980	530	13.70	72,610	14.0	51	7,116	560	14.24	79,726
1981	540	14.60	78,840	13.5	53	7,149	569	15.11	85,989
1982	565	14.50	81,925	13.5	53	7,149	594	15.00	89,074
1983	575	14.60	83,950	13.0	53	6,902	603	15.07	90,852
1984	540	14.40	77,760	10.7	53	5,670	563	14.82	83,430
1985	555	13.70	76,035	9.3	54	5,023	575	14.10	81,058

MILK: QUANTITIES USED AND MARKETED BY FARMERS, MASSACHUSETTS, 1975 - 1985

YEAR	TOTAL PRODUCED	MILK, USED ON FARMS WHERE PRODUCED			MILK MARKETED BY FARMERS		
		USED FOR MILK, CREAM AND BUTTER	FED TO CALVES	TOTAL	SOLD TO PLANTS AND DEALERS	SOLD DIRECTLY TO CONSUMERS	TOTAL
	Million Pounds						
1975	601	7	5	12	555	34	589
1976	598	7	5	12	550	36	586
1977	597	6	5	11	550	36	586
1978	572	5	5	10	530	32	562
1979	566	4	6	10	525	31	556
1980	570	4	6	10	530	30	560
1981	578	4	5	9	540	29	569
1982	602	3	5	8	565	29	594
1983	613	2	8	10	575	28	603
1984	573	2	8	10	540	23	563
1985	585	2	8	10	555	20	575

MILK SOLD TO PLANTS: MONTHLY AND ANNUAL AVERAGE PRICE PER 100 POUNDS RECEIVED BY FARMERS, MASSACHUSETTS, 1975 - 1985

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
	Dollars												
1975	9.55	9.50	9.15	8.95	8.50	8.35	9.05	9.65	10.30	10.80	11.10	11.20	9.65
1976	11.10	10.80	10.70	10.00	9.90	9.75	10.40	11.00	11.30	11.50	11.20	10.70	10.70
1977	10.60	10.50	10.20	10.20	9.90	10.00	10.50	10.90	11.20	11.40	11.40	11.20	10.70
1978	11.10	11.20	11.00	10.70	10.70	10.60	11.00	11.60	12.10	12.70	12.90	12.70	11.50
1979	12.70	12.80	12.50	12.20	12.00	12.00	12.50	13.10	13.40	13.80	13.90	13.40	12.80
1980	13.60	13.40	13.30	13.00	13.00	12.80	13.30	13.70	14.20	14.70	14.80	14.70	13.70
1981	14.90	14.70	14.50	14.30	14.00	13.80	14.30	14.60	14.90	15.20	15.00	14.80	14.60
1982	14.90	14.70	14.50	14.20	13.80	13.70	14.20	14.60	14.90	15.00	15.10	14.80	14.50
1983	14.80	14.80	14.40	14.30	13.90	13.80	14.20	14.70	14.90	15.10	15.20	14.60	14.60
1984	14.60	14.30	14.10	13.90	13.80	13.60	14.00	14.50	14.90	15.30	15.40	14.90	14.40
1985	14.90	14.60	14.10	13.60	13.20	12.70	13.20	13.40	13.60	13.80	13.80	13.60	13.70

MILK: PRODUCTION AND VALUE, MASSACHUSETTS, 1975 - 1985

YEAR	AVERAGE NUMBER OF MILK COWS	PRODUCTION					VALUE OF MILK PRODUCED
		PER MILK COW		PERCENTAGE OF FAT IN ALL MILK PRODUCED	TOTAL		
		MILK	MILKFAT		MILK	MILKFAT	
	1,000	Pounds		Percent	Million Pounds		1,000 Dollars
1975	55	10,927	397	3.63	601	22	61,122
1976	54	11,074	405	3.66	598	22	67,215
1977	51	11,706	431	3.68	597	22	67,103
1978	49	11,673	428	3.67	572	21	68,526
1979	48	11,792	429	3.64	566	21	75,160
1980	46	12,391	447	3.61	570	21	81,150
1981	46	12,565	456	3.63	578	21	87,349
1982	47	12,809	466	3.64	602	22	90,273
1983	48	12,771	469	3.67	613	23	92,359
1984	48	11,938	445	3.73	573	21	84,912
1985	47	12,447	463	3.72	585	22	82,468

MANUFACTURED DAIRY: PRODUCTION MAJOR PRODUCTS, MASSACHUSETTS, 1975 - 1985

YEAR	TOTAL CHEESE 1/	ICE CREAM	ICE MILK	MILK SHERBET
	1,000 Pounds	1,000 Gallons		
1975	5,288	47,761	9,177	1,985
1976	6,123	46,320	7,246	2,116
1977	5,786	45,255	7,483	2,180
1978	7,780	42,909	9,779	2,102
1979	6,255	42,463	10,454	1,829
1980	5,099	43,986	9,817	1,992
1981	8,559	43,193	10,173	2,089
1982	9,110	44,444	6,574	2,198
1983	12,643	44,510	9,138	2,297
1984	11,689	46,862	7,802	2,155
1985	12,765	46,992	7,442	1,991

1/ Excluding cottage cheese.

POULTRY HIGHLIGHTS

EGGS:

Laying flocks in Massachusetts produced 257 million eggs during 1985, 4 percent fewer than in 1984. Average daily rate of lay was 68.6 eggs per 100 layers, compared with 69.1 in 1984. Average price received, 98¢ per dozen in 1985, was down 11¢ from the record high price received in 1984. Value of egg production totaled nearly $21 million in 1985, compared with $24 million in 1984.

CHICKENS:

The number of chickens on farms (excluding broilers) totaled 1.4 million on December 1, 1985, 10 percent fewer than a year earlier. Hens and pullets of laying age comprised 76 percent of that total in 1985, compared with 72 percent in 1984. Hens one year or more of age made up only 35 percent of the total HPLA in 1985, compared with 59 percent in 1984. Total value of all chickens of $3.9 million December 1, 1985 was slightly less than the $4.0 million a year earlier. A higher value per bird nearly compensated for the decline in numbers during the period.

TURKEYS

The number of turkeys raised in Massachusetts, at 156,000 in 1985, compares with 152,000 in 1984. Production totaled 3.2 million pounds in 1985, slightly less than the 3.3 million pound total of 1984. Value of production totaled $2.8 million both years.

POULTRY: INVENTORY BY CLASS AND VALUE, MASSACHUSETTS, DECEMBER 1, 1974 - 1985

YEAR	CHICKENS, EXCLUDING BROILERS						VALUE PER HEAD	TOTAL VALUE
	HENS AND PULLETS OF LAYING AGE		PULLETS NOT OF LAYING AGE		OTHER	TOTAL		
	HENS	PULLETS	3 MONTHS AND OLDER	UNDER 3 MONTHS				
	1,000						Dollars	1,000 Dollars
1974	772	939	224	271	31	2,237	2.10	4,698
1975	725	786	293	268	19	2,091	2.35	4,914
1976	593	782	239	241	15	1,870	2.40	4,488
1977	465	1,005	290	180	50	1,990	2.05	4,080
1978	550	620	196	174	40	1,580	2.05	3,239
1979	617	755	126	197	31	1,726	2.15	3,711
1980	644	811	108	209	18	1,790	2.30	4,117
1981	650	622	141	153	37	1,603	2.55	4,088
1982	742	458	156	166	18	1,540	2.55	3,927
1983	595	514	110	138	21	1,378	2.45	3,376
1984	651	450	160	225	34	1,520	2.60	3,952
1985	360	680	192	109	24	1,365	2.85	3,890

POULTRY: AVERAGE NUMBER OF LAYERS BY MONTHS AND ANNUAL, MASSACHUSETTS, 1975 - 1985

MONTH	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
						1,000					
DEC 1/	1,751	1,504	1,434	1,447	1,253	1,342	1,412	1,299	1,195	1,069	1,065
JAN	1,742	1,496	1,501	1,402	1,338	1,320	1,362	1,357	1,185	1,077	1,049
FEB	1,715	1,474	1,515	1,440	1,400	1,331	1,322	1,378	1,086	1,122	1,005
MAR	1,743	1,429	1,509	1,500	1,480	1,339	1,326	1,354	1,028	1,100	943
APR	1,718	1,401	1,514	1 503	1,435	1,332	1,334	1,340	1,032	1,086	963
MAY	1,668	1,408	1,539	1,484	1,385	1,318	1,293	1,326	1,047	1,063	985
JUN	1,637	1,428	1,519	1,392	1,395	1,300	1,220	1,278	1,037	1,038	985
JUL	1,662	1,415	1,521	1,340	1,421	1,309	1,195	1,272	1,025	1,037	997
AUG	1,679	1,400	1,515	1,388	1,416	1,355	1,211	1,266	1,019	1,018	1,008
SEP	1,614	1,399	1,435	1,395	1,365	1,383	1,272	1,245	1,015	1,012	1,066
OCT	1,566	1,406	1,401	1,383	1,373	1,387	1,368	1,230	1,011	1,025	1,148
NOV	1,537	1,398	1,440	1,280	1,384	1,420	1,330	1,215	1,064	1,066	1,102
ANNUAL	1,669	1,430	1,487	1,413	1,387	1,345	1,303	1,297	1,062	1,059	1,027

EGGS: DAILY RATE OF LAY BY MONTHS AND ANNUAL, MASSACHUSETTS, 1975 - 1985

MONTH	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
						Percent					
DEC 1/	64.0	65.5	65.3	63.1	67.0	67.3	66.3	69.5	64.8	72.4	69.7
JAN	64.5	65.0	65.2	64.5	67.1	66.0	63.9	66.5	68.1	68.9	67.6
FEB	64.1	64.5	63.9	66.0	67.6	67.3	64.8	64.8	69.1	64.6	67.5
MAR	64.6	65.8	64.4	65.0	67.9	67.5	68.1	65.2	65.9	73.3	68.4
APR	67.0	67.8	65.5	65.7	67.1	67.6	67.5	66.8	67.8	70.6	69.2
MAY	68.0	68.3	66.9	67.2	64.9	66.1	70.0	67.6	67.3	66.8	68.8
JUN	67.5	67.3	69.3	67.9	64.7	66.7	71.0	67.7	67.5	70.6	67.7
JUL	66.3	66.0	66.0	67.4	66.4	66.5	67.5	67.0	69.2	71.5	67.9
AUG	66.0	64.0	63.4	66.2	66.7	61.9	69.3	66.2	69.6	69.7	67.2
SEP	65.8	62.3	64.4	66.3	67.3	62.7	68.1	64.8	69.0	69.2	71.9
OCT	65.8	63.5	65.1	66.8	67.0	67.5	66.0	65.1	67.0	66.1	67.5
NOV	66.3	65.3	64.7	66.8	67.9	68.1	67.7	65.4	72.0	65.7	69.6
ANNUAL	66.0	65.5	65.4	66.1	67.0	66.2	67.4	66.3	68.5	69.1	68.6

EGGS: TOTAL PRODUCTION BY MONTHS AND ANNUAL, MASSACHUSETTS, 1975 - 1985

MONTH	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
						Million					
DEC 1/	35	31	29	28	26	28	29	28	24	24	23
JAN	35	30	30	28	28	27	27	28	25	23	22
FEB	31	28	27	27	27	26	24	25	21	21	19
MAR	35	29	30	30	31	28	28	27	21	25	20
APR	35	28	30	30	29	27	27	27	21	23	20
MAY	35	30	32	31	28	27	28	28	23	22	21
JUN	33	29	32	28	27	26	26	26	21	22	20
JUL	34	29	31	28	29	27	25	26	22	23	21
AUG	34	28	30	28	29	26	26	26	22	22	21
SEP	32	26	28	28	28	26	26	24	21	21	23
OCT	32	28	28	29	29	29	28	25	21	21	24
NOV	31	27	28	26	28	29	27	24	23	21	23
ANNUAL	402	343	355	341	339	326	321	314	265	268	257

1/ Previous year

CHICKENS: PRODUCTION, DISPOSITION AND INCOME, MASSACHUSETTS, 1975 - 1985

YEAR	NUMBER OF BIRDS			LIVEWEIGHT			PRICE PER POUND	GROSS INCOME
	PRODUCED	CONSUMED	SOLD	PRODUCED	CONSUMED	SOLD		
	1,000			1,000 Pounds			Cents	1,000 Dollars
1975	1,371	11	1,506	7,111	51	7,982	10.3	827
1976	1,090	11	1,300	6,186	51	7,150	13.3	958
1977	1,331	11	1,200	7,475	51	6,600	11.3	752
1978	901	11	1,300	5,134	51	7,150	12.3	885
1979	1,057	11	900	5,835	51	4,950	13.2	660
1980	1,225	11	1,150	6,708	51	6,325	8.3	529
1981	1,474	11	1,650	8,266	51	9,075	9.0	822
1982	828	11	880	4,457	51	4,840	8.0	391
1983	838	11	989	4,793	51	5,440	10.5	576
1984	861	11	708	4,304	51	3,894	16.5	651
1985	1/	1/	1,107	1/	1/	6,089	12.0	731

EGGS: PRODUCTION AND VALUE, MASSACHUSETTS, 1975 - 1985

YEAR	EGGS PRODUCED	EGGS SOLD	PRICE PER DOZEN	CASH RECEIPTS	VALUE OF PRODUCTION
	Million		Cents	1,000 Dollars	
1975	402	401	66.2	22,122	22,177
1976	343	342	72.1	20,549	20,609
1977	355	354	69.9	20,621	20,679
1978	341	340	66.2	18,757	18,812
1979	339	338	73.8	20,787	20,849
1980	326	325	74.5	20,177	20,239
1981	321	320	86.0	22,933	23,005
1982	314	313	84.0	21,910	21,980
1983	265	264	91.0	20,020	20,096
1984	268	267	109.0	24,253	24,344
1985	257	1/	98.0	1/	20,988

TURKEYS: PRODUCTION AND VALUE, MASSACHUSETTS, 1975 - 1985

YEAR	TURKEYS RAISED		NUMBER PRODUCED	POUNDS PRODUCED	PRICE PER POUND	VALUE OF PRODUCTION
	HEAVY	LIGHT				
	1,000			1,000 Pounds	Cents	1,000 Dollars
1975	106	19	125	2,375	58	1,378
1976	122	21	143	2,860	58	1,659
1977	110	15	125	2,600	58	1,508
1978	128	18	146	2,993	68	2,035
1979	133	7	140	2,800	65	1,820
1980	126	-	126	2,470	78	1,926
1981	145	-	145	3,045	77	2,345
1982	145	-	145	3,089	77	2,378
1983	160	-	160	3,312	84	2,782
1984	152	-	152	3,314	83	2,750
1985	156	-	156	3,229	86	2,777

1/ Estimate discontinued.

HATCH: BROILER-TYPE CHICKS BY COMMERCIAL HATCHERIES, NEW ENGLAND, 1978 - 1985

MONTH	1978	1979	1980	1981	1982	1983	1984	1985
				1,000				
JANUARY	8,370	8,742	6,691	6,770	2,712	2,043	2,668	2,095
FEBRUARY	7,644	8,103	6,617	5,665	2,548	2,699	2,707	2,239
MARCH	8,961	9,093	7,535	6,391	2,876	2,721	2,604	2,618
APRIL	9,218	9,192	7,252	4,645	3,115	2,890	2,686	2,739
MAY	9,383	9,424	7,545	3,294	3,047	2,841	2,491	2,472
JUNE	8,855	9,216	7,524	3,129	2,910	2,528	2,690	2,250
JULY	9,033	9,216	7,495	3,107	2,774	2,440	2,562	2,306
AUGUST	8,661	8,796	7,620	2,888	2,948	2,249	2,669	1,975
SEPTEMBER	8,168	7,385	6,783	2,844	2,980	2,303	2,165	2,261
OCTOBER	7,998	6,903	6,654	2,672	2,687	2,317	2,382	1,919
NOVEMBER	7,835	6,875	6,857	2,401	2,297	2,143	2,175	2,037
DECEMBER	8,196	7,292	6,999	2,391	2,493	2,511	2,226	2,659
ANNUAL	102,322	100,237	85,572	46,197	33,387	29,685	30,025	27,570

HATCH: EGG-TYPE CHICKS BY COMMERCIAL HATCHERIES, NEW ENGLAND, 1978 - 1985

MONTH	1978	1979	1980	1981	1982	1983	1984	1985
				1,000				
JANUARY	1,668	1,860	2,150	1,767	1,102	1,626	1,911	1,670
FEBRUARY	1,684	1,936	1,899	1,837	1,230	1,370	1,828	1,580
MARCH	1,837	2,128	1,990	2,024	1,685	2,008	2,385	1,709
APRIL	2,145	2,470	1,797	2,060	2,015	1,947	2,299	2,137
MAY	2,231	2.440	2,098	1,954	2,221	2,018	1,981	1,858
JUNE	2,347	2,165	1,899	1,970	1,763	2,070	2,269	1,689
JULY	2,131	2,131	1,782	1,676	1,646	1,716	1,891	1,465
AUGUST	1,967	2,270	2,097	1,647	1,368	1,687	1,862	1,814
SEPTEMBER	1,886	1,438	1,714	1,748	1,426	1,894	1,613	1,635
OCTOBER	2,062	1,938	1,934	1,896	1,603	1,669	2,034	1,777
NOVEMBER	1,863	2,071	1,693	1,538	1,512	1,797	1,912	1,718
DECEMBER	1,850	2,233	1,738	1,467	1,740	2,094	1,909	1,732
ANNUAL	23,671	25,080	22,791	21,584	19,311	21,896	23,894	20,784

CROP HIGHLIGHTS

CORN SILAGE:

Corn silage production in the Commonwealth totaled 741,000 tons in 1985, 20 percent above 1984's low output. Growers increased planted acreage to 46,000 acres, and prospects for the 1985 crop were running high until Hurricane Gloria hit. High winds knocked down corn, and excessive rains turned fields to mud. Wet conditions persisted throughout harvest, making corn chopping extremely difficult and slow. Reduced acreage harvested, however was offset by improved tonnage per acre. Timely rains earlier in the season produced excellent yields on undamaged acreage, and the 1985 crop weighed in at an average of 19 tons per acre. Value of the 1985 silage crop totaled $22.2 million, an increase of 19 percent over 1984.

HAY:

Hay output from Massachusetts farms totaled 278,000 tons in 1985, 7 percent under 1984 production. Increased alfalfa production was more than offset by a 12 percent drop in other hay tonnage. Wet conditions at harvest forced many growers to chop hayland for green chop or haylage.

Alfalfa and alfalfa mixtures comprised 31 percent of all hay production. Improved yields brought total alfalfa output to 87,000 tons. Other hay weighed in at 191,000 tons, falling below 1984 output due to reductions in both acreage and yield.

The 1985 hay crop was valued at $25.9 million, 10 percent under the previous year.

TOBACCO:

Massachusetts tobacco output totaled 781,000 pounds in 1985, slightly under 1984 production. The crop was valued at $7.1 million, an increase of 7 percent over 1984.

Havana seed acreage dropped to 130 acres in 1985, the smallest outdoor acreage on record in the Commonwealth. The favorable growing and curing season contributed to high yields in 1985, and growers averaged 1,960 pounds per acre.

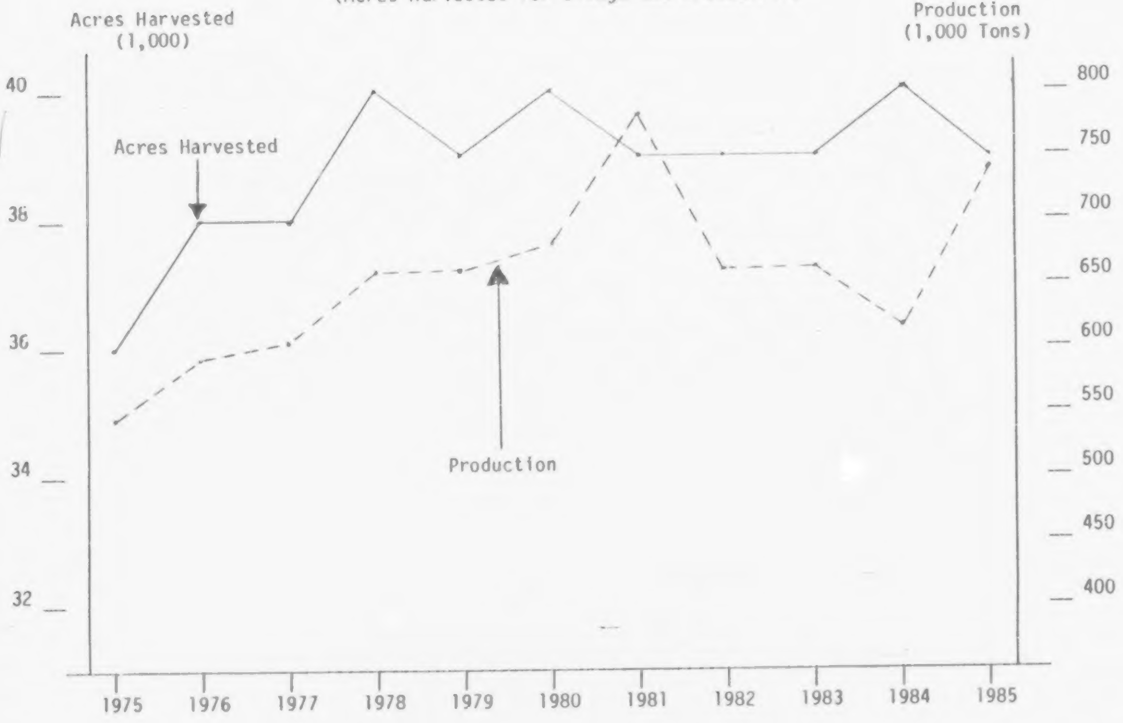
Increased acreage and improved yields placed 1985 shade production 7 percent above the previous year. Yields averaged 60 pounds per acre heavier than in 1984.

CORN: ACREAGE, PRODUCTION AND VALUE, MASSACHUSETTS, 1975 - 1985

YEAR	ACRES PLANTED FOR ALL PURPOSES	SILAGE			
		ACRES HARVESTED	YIELD PER ACRE	TOTAL PRODUCTION	VALUE OF PRODUCTION
	1,000		Tons	1,000 Tons	1,000 Dollars
1975	39	36	15.0	540	11,475
1976	43	38	15.5	589	12,987
1977	44	38	16.0	608	13,923
1978	45	40	16.5	660	14,850
1979	44	39	17.0	663	16,575
1980	45	40	17.0	680	19,380
1981	46	39	20.0	780	19,968
1982	46	39	17.0	663	18,763
1983	43	39	17.0	663	19,956
1984	45	40	15.5	620	18,724
1985	46	39	19.0	741	22,230

MASSACHUSETTS CORN

(Acres Harvested for Silage and Production)



ALFALFA HAY: ACREAGE AND PRODUCTION, MASSACHUSETTS, 1975 - 1985

YEAR	ACRES HARVESTED	YIELD PER ACRE	PRODUCTION
		Tons	Tons
1975	26,000	2.60	68,000
1976	26,000	2.45	64,000
1977	28,000	2.30	64,000
1978	28,000	2.60	73,000
1979	27,000	2.90	78,000
1980	27,000	2.40	65,000
1981	28,000	2.80	78,000
1982	29,000	2.80	81,000
1983	29,000	3.00	87,000
1984	30,000	2.80	84,000
1985	30,000	2.90	87,000

ALL OTHER HAY: ACREAGE AND PRODUCTION, MASSACHUSETTS, 1975 - 1985

YEAR	ACRES HARVESTED	YIELD PER ACRE	PRODUCTION
		Tons	Tons
1975	92,000	2.05	189,000
1976	94,000	2.00	188,000
1977	92,000	1.90	175,000
1978	92,000	2.15	198,000
1979	92,000	2.25	207,000
1980	88,000	2.10	185,000
1981	90,000	2.15	194,000
1982	90,000	2.25	203,000
1983	94,000	2.40	226,000
1984	96,000	2.25	216,000
1985	91,000	2.10	191,000

ALL HAY: ACREAGE, PRODUCTION AND VALUE, MASSACHUSETTS, 1975 - 1985

YEAR	ACRES HARVESTED	YIELD PER ACRE	PRODUCTION	PRICE PER TON	VALUE OF PRODUCTION
		Tons	Tons	Dollars	1,000 Dollars
1975	118,000	2.18	257,000	79.00	20,303
1976	120,000	2.10	252,000	71.00	17,892
1977	120,000	1.99	239,000	69.00	16,491
1978	120,000	2.26	271,000	73.00	19,783
1979	119,000	2.39	285,000	72.00	20,520
1980	115,000	2.17	250,000	76.00	19,000
1981	118,000	2.31	272,000	80.00	21,760
1982	119,000	2.39	284,000	89.00	25,276
1983	123,000	2.54	313,000	92.00	28,796
1984	126,000	2.38	300,000	95.00	28,500
1985	121,000	2.30	278,000	93.00	25,854

TOBACCO, SHADE TYPE: ACREAGE, PRODUCTION AND VALUE, MASSACHUSETTS, 1975 - 1985

YEAR	ACRES HARVESTED	YIELD PER ACRE	TOTAL PRODUCTION	PRICE PER POUND	VALUE OF PRODUCTION
		Pounds	1,000 Pounds	Dollars	1,000 Dollars
1975	1,250	1,335	1,669	6.40	10,682
1976	1,050	1,480	1,554	5.40	8,392
1977	980	1,600	1,568	6.00	9,408
1978	860	1,300	1,118	7.50	8,385
1979	770	1,400	1,078	8.50	9,163
1980	940	1,475	1,387	9.80	13,593
1981	900	1,575	1,418	10.00	14,180
1982	250	1,200	300	12.50	3,750
1983	170	1,470	250	11.00	2,750
1984	350	1,400	490	12.50	6,125
1985	360	1,460	526	12.65	6,654

TOBACCO, HAVANA SEED: ACREAGE, PRODUCTION AND VALUE, MASSACHUSETTS, 1975 - 1985

YEAR	ACRES HARVESTED	YIELD PER ACRE	TOTAL PRODUCTION	PRICE PER POUND	VALUE OF PRODUCTION
		Pounds	1,000 Pounds	Dollars	1,000 Dollars
1975	170	1,650	281	0.98	275
1976	160	1,819	291	0.87	253
1977	180	1,880	338	0.98	331
1978	170	2,000	340	1.10	374
1979	220	1,850	407	1.20	488
1980	250	2,000	500	1.31	655
1981	240	2,300	552	1.40	773
1982	300	1,840	552	1.35	745
1983	255	2,090	533	1.40	746
1984	150	1,965	295	1.55	457
1985	130	1,960	255	1.60	408

FRUIT AND VEGETABLE HIGHLIGHTS

CRANBERRIES:

Cranberry production in Massachusetts surpassed all records in 1985, securing the Commonwealth's place as number one in the Nation. Growers harvested 1.69 million barrels, exceeding 1984 output by 1 percent, and 19 percent above the 1983 crop. Excellent growing conditions contributed to a record high yield of 149.3 barrels to the acre. Bogs survived the relatively dry winter with little damage. Although dry conditions persisted into the spring, water supplies were sufficient to maintain adequate frost protection in most areas. Adequate rainfall, warm temperatures and generally light insect levels prevailed throughout the rest of the season, promoting a high-yielding, high-quality crop.

APPLES:

Massachusetts commercial apple production totaled 2.1 million bushels (42-pound units) in 1985, 8 percent under 1984 output. Hail and frost damage early in the season reduced crop potential in many areas, then Hurricane Gloria arrived at peak harvest. Apple picking had reached the half-way mark when the high winds hit, and fruit losses were extensive in Worcester and easternmost counties. Orchardists salvaged most of the drops to process for cider, but an estimated 95,000 bushels could not be utilized. Value of the 1985 crop dropped to $15.6 million, 14 percent under the previous year.

PEACHES:

Peach growers in Massachusetts harvested 44,000 bushels (48-pound units) in 1985, 10 percent above 1984 production, and the largest crop on record since 1973. Damage from early May freeze and late season hurricane winds was offset by excellent growing conditions. Little winter injury, heavy bloom, and good pollinating weather promoted heavy set and high quality fruit in most areas. The 1985 crop was valued at $861,000, 13 percent above the previous year.

POTATOES:

Near ideal growing conditions in 1985 promoted excellent tuber sizing and set in the Commonwealth's potato growing region. Increased harvested acreage, and record yields of 250 cwt. per acre contributed to a 42 percent increase in potato production over 1984's low output. The 1985 crop weighed in at 825,000 cwt., the largest potato crop in the Commonwealth since 1977. Harvest was complete the last week of October, nearly two weeks behind schedule due to poor prices and market availability.

VEGETABLES:

Production of sweet corn in 1985 for fresh market sales totaled 743,000 cwt., 4 percent more than 1984 production. Higher yield more than compensated for the slight decline in acreage from the 1984 level. Value of production, at $9.5 million in 1985, was 8 percent less than the 1984 value, because of the lower price in 1985. Tomato production in 1985 totaled 164,000 cwt., 8 percent more than in 1984. The average price remained the same at $27 per cwt., producing a value of production of $4.4 million in 1985, an 8 percent increase from 1984.

CRANBERRIES: ACREAGE, PRODUCTION, UTILIZATION AND VALUE, MASSACHUSETTS, 1975 - 1985

YEAR	ACRES	YIELD PER ACRE	PRODUCTION 1/	UTILIZATION			SEASON AVERAGE PRICE PER BARREL 3/	VALUE OF UTILIZED PRODUCTION 4/
				FRESH SALES	PROCESSED	SHRINKAGE 2/		
		Barrels	1,000 Barrels				Dollars	1,000 Dollars
1975	11,200	70.1	785	162	508	115	13.00	10,205
1976	11,200	83.5	935	220	630	85	13.40	12,529
1977	11,200	78.1	875	207	576	92	17.70	15,488
1978	11,200	105.4	1,180	247	833	100	21.60	25,488
1979	11,200	96.4	1,080	130	880	70	26.60	28,728
1980	11,200	105.8	1,185	110	1,016	59	33.50	39,698
1981	11,200	104.6	1,172	205	875	92	41.50	48,639
1982	11,200	114.9	1,287	169	998	120	46.30	59,588
1983	11,200	126.9	1,421	177	1,217	27	51.70	73,466
1984	11,200	148.5	1,663	170	1,442	51	54.40	90,467
1985	11,300	149.3	1,687	167	1,472	48	54.80	92,448

1/ Includes cranberries that were put in set aside under the Cranberry Marketing Order.
2/ Berries paid for by processors and lost because of dehydration and berry breakdown after delivery.
3/ Equivalent return at first delivery point, screen basis.
4/ Excludes cranberries that were put in set aside under the Cranberry Marketing Order.

APPLES: PRODUCTION AND VALUE, MASSACHUSETTS, 1975 - 1985

YEAR	TOTAL PRODUCTION 1/	UTILIZED PRODUCTION	PRICE PER UNIT	VALUE OF UTILIZED PRODUCTION
	1,000 42-Pound Units		Dollars	1,000 Dollars
1975	2,500	2,333	4.37	10,192
1976	2,262	2,262	6.13	13,870
1977	2,262	2,190	5.38	11,776
1978	2,500	2,500	5.80	14,490
1979	2,262	2,262	6.51	14,725
1980	2,381	2,381	6.11	14,550
1981	1,976	1,976	8.35	16,501
1982	2,381	2,381	7.26	17,290
1983	2,310	2,310	7.10	16,403
1984	2,310	2,310	7.82	18,063
1985	2,119	2,024	7.70	15,594

1/ Estimates relate to production in orchards of 100 or more trees.

PEACHES: PRODUCTION AND VALUE, MASSACHUSETTS, 1975 - 1985

YEAR	PRODUCTION	PRICE PER UNIT	VALUE OF PRODUCTION
	1,000 48-Pound Units	Dollars	1,000 Dollars
1975	42	9.52	400
1976	35	12.63	442
1977	42	10.48	440
1978	38	13.74	522
1979	38	15.16	576
1980	42	14.29	600
1981	4	17.50	70
1982	31	21.77	675
1983	35	22.34	782
1984	40	19.00	760
1985	44	19.57	861

POTATOES: ACREAGE, PRODUCTION AND VALUE, MASSACHUSETTS 1975 - 1985

YEAR	ACRES HARVESTED	YIELD PER ACRE	TOTAL PRODUCTION	AVERAGE PRICE PER CWT.	VALUE OF PRODUCTION
		Cwt.	1,000 Cwt.	Dollars	1,000 Dollars
1975	3,900	205	800	5.00	4,000
1976	3,500	220	770	5.80	4,466
1977	3,700	240	888	5.40	4,795
1978	3,600	225	810	6.30	5,103
1979	3,400	220	748	5.60	4,189
1980	3,400	220	748	7.50	5,610
1981	3,300	225	743	5.40	4,012
1982	3,800	205	779	3.90	3,038
1983	3,400	190	646	7.20	4,651
1984	2,900	200	580	5.40	3,132
1985	3,300	250	825	4.45	3,671

TOMATOES: ACREAGE, PRODUCTION AND VALUE, MASSACHUSETTS, 1975 - 1985

YEAR	ACRES HARVESTED	YIELD PER ACRE	TOTAL PRODUCTION	AVERAGE PRICE PER CWT.	VALUE OF PRODUCTION
		Cwt.	1,000 Cwt.	Dollars	1,000 Dollars
1975	630	210	132	18.00	2,376
1976	590	195	115	21.40	2,461
1977	560	190	106	20.40	2,162
1978	550	210	116	21.80	2,529
1979	510	190	97	24.60	2,386
1980	680	210	143	21.70	3,103
1981	760	215	163	20.10	3,276
1982	660	220	145	30.00	4,350
1983	570	165	94	30.00	2,820
1984	660	230	152	27.00	4,104
1985	670	245	164	27.00	4,428

SWEET CORN: ACREAGE, PRODUCTION AND VALUE, MASSACHUSETTS, 1975 - 1985

YEAR	ACRES HARVESTED	YIELD PER ACRE	TOTAL PRODUCTION	AVERAGE PRICE PER CWT.	VALUE OF PRODUCTION
		Cwt.	1,000 Cwt.	Dollars	1,000 Dollars
1975	8,600	81	697	7.10	4,949
1976	8,200	72	590	7.71	4,549
1977	7,800	60	468	8.90	4,165
1978	7,200	88	634	7.00	4,438
1979	7,700	84	647	8.99	5,817
1980	8,200	88	722	9.09	6,563
1981	8,800	85	748	11.70	8,752
1982	7,700	88	678	14.00	9,492
1983	8,700	92	800	13.30	10,640
1984	8,100	88	713	14.50	10,339
1985	7,900	94	743	12.80	9,510

MAPLE SYRUP

The production of maple syrup during the 1986 season in Massachusetts totaled 30,000 gallons, 29 percent less than the previous season. The decrease in production from previous year was due to lower yield per tap which more than offset a higher number of taps. The season was reported as being unfavorable, with the weather being mostly too warm. The season lasted about 25 days. The average opening date was around March 8, with the average closing date approximately April 1. The sweetness of sap was near normal with a reported average of 39 gallons of sap to make a gallon of syrup. The color of syrup was mostly medium. The 1986 maple crop averaged around a record high $26.30 per gallon compared to $22.40 per gallon for maple syrup produced in 1985. The value of production for 1986 season totaled $789,000, down $152,000 from the 1985 crop. The lower value of production was due to the production decrease, more than offsetting the increase in average price.

MAPLE SYRUP: PRODUCTION AND VALUE, MASSACHUSETTS, 1975 - 1986

YEAR	PRODUCTION	SEASON AVERAGE PRICE PER GALLON	VALUE OF PRODUCTION
	1,000 Gallons	Dollars	1,000 Dollars
1975	31	10.70	332
1976	27	12.75	344
1977	27	14.20	383
1978	28	14.10	395
1979	30	15.90	477
1980	18	18.40	331
1981	40	18.70	748
1982	30	20.20	606
1983	20	20.90	418
1984	26	20.62	536
1985	42	22.40	941
1986	30	26.30	789

MAPLE SYRUP PRICES: BY TYPE OF SALE AND SIZE OF CONTAINER, MASSACHUSETTS, 1975 - 1985

YEAR	RETAIL					WHOLESALE					ALL SALES EQUIVALENT PER GALLON
	GAL	1/2 GAL	QUART	PINT	1/2 PINT	GAL	1/2 GAL	QUART	PINT	1/2 PINT	
	Dollars										
1975	11.10	6.20	3.75	2.50	1.50	10.00	5.45	3.30	2.05	1.15	10.70
1976	11.65	6.45	3.90	2.55	1.50	10.35	5.75	3.35	2.20	1.35	12.75
1977	12.30	6.90	4.05	2.65	1.80	11.20	6.05	3.70	2.40	1.50	14.20
1978	13.10	7.40	4.29	2.81	1.86	11.66	6.59	3.79	2.41	1.49	14.10
1979	14.88	8.37	4.84	3.12	2.13	12.53	7.13	4.09	2.66	1.77	15.90
1980	17.66	9.69	5.88	3.69	2.46	16.25	8.94	4.73	3.07	1.98	18.40
1981	18.69	10.73	6.23	4.07	2.59	16.44	9.39	5.39	3.33	2.01	18.70
1982	19.39	11.31	6.61	4.20	2.68	16.38	9.87	5.41	3.46	2.13	20.20
1983	19.29	11.08	6.56	4.23	2.64	17.09	9.76	5.74	3.42	2.23	20.90
1984	19.40	11.16	6.56	4.28	2.66	16.80	9.54	5.48	3.50	2.25	20.60
1985	20.32	11.71	6.81	4.22	2.75	17.77	10.18	5.71	3.49	2.25	22.40

PRICES PAID BY FARMERS: INDEX NUMBERS, ANNUAL AVERAGE, UNITED STATES, 1975 - 1985, BY YEARS (1977=100)

YEAR	COMMODITIES & SERVICES, INTEREST, TAXES & WAGE RATES	PRODUCTION ITEMS INTEREST, TAXES & WAGE RATES	PRODUCTION ITEMS	INTEREST PAYABLE PER ACRE	TAXES PAYABLE PER ACRE	WAGE RATES FOR HIRED FARM LABOR 1/
1975	89	89	91	77	87	85
1976	95	95	97	88	94	93
1977	100	100	100	100	100	100
1978	108	109	108	117	100	107
1979	123	125	125	143	107	117
1980	138	139	138	174	115	126
1981	151	151	148	211	123	137
1982	157	156	150	241	124	144
1983	161	159	153	250	129	148
1984	164	161	155	255	132	151
1985	163	157	151	242	133	154

1/ Simple average of quarterly indexes seasonally adjusted.

INDEX NUMBERS OF PRICES RECEIVED BY FARMERS, BY COMMODITY GROUPS, U.S. ANNUAL AVE., 1975 - 1985 (1977=100)

YEAR	CROPS								LIVESTOCK & PRODUCTS				ALL FARM PRODUCTS
	FOOD GRAINS	FEED GRAINS AND HAY	TOBACCO	COTTON	OIL BEARING CROPS	FRUIT	COMMERCIAL VEGETABLES	TOTAL	DAIRY PRODUCTS	POULTRY & EGGS	MEAT ANIMALS	TOTAL	
1975	155	127	93	68	81	85	92	105	90	103	100	98	101
1976	129	120	93	99	85	80	91	102	100	102	101	101	102
1977	100	100	100	100	100	100	100	100	100	100	100	100	100
1978	122	101	109	91	93	137	105	105	109	106	134	124	115
1979	147	114	118	96	103	144	110	116	124	111	166	147	132
1980	165	132	125	114	102	124	113	125	135	112	156	144	134
1981	166	141	140	111	110	130	136	134	142	116	150	143	139
1982	146	120	153	92	88	175	126	121	140	110	155	145	133
1983	148	143	155	104	102	128	130	128	140	118	147	141	135
1984	144	145	153	108	109	202	135	139	139	135	151	146	142
1985	133	122	154	92	84	183	128	120	131	119	142	136	128

FEED PRICES: AVERAGE PRICE PAID, BY MONTH, MASSACHUSETTS, 1981 - 1985

KIND AND YEAR		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
							Dollars Per Ton						
Laying Feed	1981	205	200	195	195	195	195	190	188	178	178	174	174
	1982	175	174	170	170	172	173	173	171	167	159	160	164
	1983	165	167	170	176	180	179	182	190	195	195	195	192
	1984	187	181	178	181	185	185	183	180	179	173	171	170
	1985	166	166	161	160	157	152	155	155	152	157	157	160
Dairy Feed 16% protein	1981	200	200	190	195	200	195	190	185	177	180	180	180
	1982	180	178	175	178	172	177	176	176	170	155	170	171
	1983	172	169	169	172	175	173	173	180	189	192	205	200
	1984	197	185	182	183	185	185	175	168	166	164	163	163
	1985	160	160	153	150	150	146	146	150	150	153	154	160
18% protein	1981	215	215	205	210	215	210	210	200	196	200	197	197
	1982	197	195	193	196	180	191	185	187	183	163	180	182
	1983	183	180	181	182	185	181	181	186	196	200	205	205
	1984	200	190	185	185	190	188	175	170	169	167	166	165
	1985	162	161	157	154	154	151	147	153	153	156	162	163
20% protein	1981	220	220	210	215	220	215	210	205	200	200	200	200
	1982	200	200	195	197	179	194	190	190	187	167	184	183
	1983	185	184	185	185	188	184	184	191	200	205	210	210
	1984	200	195	186	186	190	188	179	178	176	173	172	171
	1985	169	165	160	159	158	151	151	157	157	161	163	167
							Dollars Per Cwt.						
Bran	1981	11.50	11.00	10.00	10.00	10.50	10.50	10.50	10.00	9.50	9.30	9.70	9.80
	1982	10.50	10.00	9.50	9.80	11.00	9.70	9.30	9.10	9.00	9.70	9.10	9.20
	1983	9.50	9.60	9.60	10.00	10.50	10.50	10.50	10.50	11.00	12.00	13.00	12.50
	1984	12.50	12.50	12.50	12.50	12.00	11.50	11.00	10.50	11.00	11.00	11.00	11.00
	1985	11.00	11.00	11.00	10.50	10.50	10.50	10.50	10.00	9.90	9.80	9.80	10.50
Middlings	1981	11.00	10.50	9.50	10.00	10.50	10.00	9.50	9.00	9.00	9.20	9.50	9.80
	1982	9.80	9.60	9.50	9.80	11.00	9.90	9.50	9.40	9.10	9.80	9.20	9.40
	1983	9.60	10.00	9.40	9.80	10.00	9.70	9.70	10.00	10.50	11.00	12.00	12.00
	1984	12.00	12.00	12.50	12.50	12.00	11.50	11.00	11.00	11.00	11.00	11.00	11.00
	1985	10.50	10.50	10.50	10.50	11.00	10.50	10.50	9.40	8.90	9.00	9.00	9.40
Cornmeal	1981	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	10.50	10.00	9.70	9.70
	1982	9.60	9.70	9.80	9.90	10.00	10.00	10.50	10.50	10.50	9.70	9.80	9.80
	1983	9.70	9.80	10.00	10.00	10.50	10.50	10.50	11.00	11.00	11.00	11.00	11.00
	1984	11.00	11.50	11.00	11.50	11.00	11.00	11.00	11.00	11.00	10.50	10.00	9.80
	1985	9.70	9.70	9.70	9.90	10.00	10.00	9.90	10.00	9.90	9.90	9.80	10.00
Soybean Meal	1981	18.00	17.50	17.50	18.00	18.00	17.50	17.00	17.00	16.50	16.00	16.00	16.00
	1982	16.00	16.50	16.50	16.50	17.00	16.00	16.00	15.50	15.50	15.00	15.50	15.50
	1983	15.50	15.50	15.50	16.00	16.00	16.00	16.00	17.00	17.50	17.00	17.50	17.50
	1984	16.50	16.50	16.00	16.00	16.00	14.00	13.00	12.00	11.50	11.00	11.50	11.50
	1985	12.00	12.00	12.00	12.00	12.00	12.00	12.00	11.50	11.50	12.00	12.00	12.50
Molasses	1981	10.00	10.00	10.00	9.80	9.50	9.00	9.00	9.00	9.00	8.70	8.30	8.10
	1982	8.10	8.10	8.10	7.80	8.60	8.00	8.70	8.10	8.10	8.30	8.00	7.70
	1983	7.80	7.80	7.80	7.80	7.90	7.80	7.80	7.80	7.80	7.80	7.90	8.00
	1984	8.00	8.00	7.90	7.90	8.10	8.20	8.20	8.30	7.50	7.50	7.50	7.70
	1985	8.00	7.80	7.00	7.00	7.00	7.10	7.20	7.20	7.20	7.00	7.30	7.50
Stock Salt	1981	8.00	7.70	7.70	7.70	7.90	8.00	8.00	8.50	8.50	8.00	8.40	8.10
	1982	8.50	8.00	8.00	8.00	9.00	7.90	8.50	8.70	8.60	9.40	8.90	9.00
	1983	9.00	9.30	9.40	9.40	9.50	9.50	9.40	10.00	10.00	10.00	10.00	9.70
	1984	9.90	10.00	9.50	9.50	9.20	9.10	9.30	9.50	9.00	9.20	8.70	8.60
	1985	9.50	10.00	9.70	9.80	10.00	10.00	9.80	9.70	9.70	9.50	10.00	10.00

FARM PRODUCTION EXPENDITURES, NORTHEAST 1/ AND UNITED STATES, 1985

EXPENDITURE 2/	NORTHEAST		UNITED STATES	
	AVERAGE PER FARM 3/	TOTAL EXPENDITURE 4/	AVERAGE PER FARM 3/	TOTAL EXPENDITURE 4/
	Dollars	Million Dollars	Dollars	Million Dollars
TOTAL FARM PRODUCTION EXPENDITURES	56,919	9,218	55,242	125,916
LIVESTOCK & POULTRY:	4,915	796	5,922	13,499
Cattle Purchased	2,519	408	4,704	10,722
Hogs & Pigs Purchased	148	24	398	907
Poultry Purchased	1,402	227	459	1,046
Other Livestock & Poultry Expenses 5/	827	134	274	625
FEED:	11,942	1,934	7,940	18,098
Grains	2,198	356	2,159	4,922
Hays & Forages	358	58	940	2,141
Mixed & Formula	6,280	1,017	2,715	6,188
Protein Concentrates	2,729	442	1,661	3,785
Minerals, Salt & Other Additives	370	60	466	1,061
FARM SERVICES:	9,095	1,473	12,368	28,192
Crop Custom Services	364	59	762	1,736
Livestock Custom Services	303	49	394	898
Custom Hired Freight & Trucking	710	115	498	1,135
Rent	1,445	234	5,563	12,679
Cash Rent	1,241	201	2,357	5,372
Share Rent	204	33	3,206	7,307
Marketing & Storage Expenses	1,081	175	1,074	2,449
Insurance	1,167	189	1,089	2,482
Leasing 6/	111	18	187	427
Miscellaneous Farm Business Expenses 7/	648	105	794	1,811
Utilities	1,550	251	1,179	2,686
Electricity	1,223	198	972	2,214
AGRICULTURAL CHEMICALS & SPRAYS: 8/	1,118	181	1,729	3,942
FERTILIZER: 9/	3,192	517	3,779	8,614
Commercial Fertilizers	2,717	440	3,607	8,222
INTEREST: 10/	3,569	578	5,494	12,522
Farm Real Estate 10/	2,476	401	3,274	7,463
Operating Loan 10/	1,093	177	2,219	5,059
TAXES (PROPERTY & REAL ESTATE): 10/	1,680	272	1,172	2,672
LABOR EXPENSES:	7,706	1,248	4,811	10,965
Cash Wages	6,335	1,026	3,804	8,672
FUELS & LUBRICANTS:	2,563	415	2,829	6,449
Diesel	976	158	1,280	2,918
Gasoline - Bulk	797	129	677	1,543
Gasoline - Service Station	266	43	269	614

See Footnotes, Page 27

FARM PRODUCTION EXPENDITURES, NORTHEAST 1/ AND UNITED STATES, 1985

EXPENDITURE 2/	NORTHEAST		UNITED STATES	
	AVERAGE PER FARM 3/	TOTAL EXPENDITURE 4/	AVERAGE PER FARM 3/	TOTAL EXPENDITURE 4/
	Dollars	Million Dollars	Dollars	Million Dollars
FARM SUPPLIES: 11/	1,260	204	779	1,775
Supplies Used in Production	772	125	540	1,231
Containers Used for Marketing	288	79	238	543
BUILDING & FENCING:	998	2,275	998	2,275
New Construction & Remodeling	840	136	667	1,520
FARM AND LAND IMPROVEMENTS:	500	81	457	1,042
New Construction	290	47	323	736
TOTAL FARM MACHINERY:	4,921	797	4,417	10,068
SEEDS AND PLANTS:	1,463	237	1,729	3,941
TRUCKS AND AUTOS:	1,253	203	773	1,762
Trucks including beds, hydr. systems, etc.	1,087	176	674	1,537

1/ Includes eleven states: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island and Vermont.

2/ Farm share.

3/ Total expenditure divided by number of farms.

4/ Totals may not add, due to rounding.

5/ Excludes veterinary supplies; bedding, litter, straw & etc.; purchase of capital equipment for livestock and poultry; repair and maintenance of livestock and poultry equipment; other non-capitalized equipment for livestock and poultry; and custom feeding of livestock on a per head or gain basis and grazing fees for livestock. Includes purchases and leasing expenses for all other livestock and livestock products (eggs, wool, milk and leasing of livestock).

6/ Includes equipment renting.

7/ Excludes telephone and water, but includes irrigation water cost and fees for 1985.

8/ Excludes seed treatments.

9/ Includes materials and applications.

10/ Includes landlord expenditures.

11/ Includes bedding, litter, straw and etc.; other non-capitalized equipment for livestock and poultry. Excludes power farm shop equipment and motor supplies.

FARM BALANCE SHEET (Excluding Farm Households), MASSACHUSETTS, DECEMBER 31, 1980 - 1984

ITEM	1980	1981	1982	1983	1984
			Million Dollars		
Assets:					
Real Estate 1/	913.8	966.9	987.0	1,065.7	1,219.0
Livestock and Poultry 2/	90.2	87.6	81.1	66.1	64.9
Machinery and Motor Vehicles 3/	169.5	180.8	182.3	180.9	170.2
Crops 4/	25.2	24.8	26.1	26.1	26.0
Financial Assets	64.4	74.4	75.9	78.3	82.4
TOTAL FARM ASSETS	1,263.2	1,334.5	1,352.4	1,417.1	1,562.6
Claims:					
Real Estate Debt 5/	74.2	82.7	86.6	89.7	100.4
Non-Real Estate Debt 6/	124.1	138.9	139.1	120.0	122.9
TOTAL FARM DEBT	198.3	221.6	225.7	209.7	223.3
Equity	1,064.9	1,112.9	1,126.7	1,207.4	1,339.3

1/ Excludes value of operator dwellings.
2/ Excludes horses, mules, and broilers.
3/ Includes only farm share value for trucks and autos.
4/ All crops held on farms including crops under CCC and crops held off farms by farm operators.
5/ Excludes debt on operator dwellings.
6/ Excludes debt for non-farm purposes.

FARM PRODUCTION EXPENSES, MASSACHUSETTS, 1980 - 1984

CURRENT FARM OPERATING EXPENSES	1980	1981	1982	1983	1984
			Million Dollars		
Feed	48.7	49.6	47.2	54.1	49.6
Livestock	1.4	1.5	1.0	1.1	1.1
Seed	7.8	7.4	6.0	5.6	6.7
Fertilizer and Lime	9.0	10.0	8.9	8.0	7.3
Repairs and Operation of Capital Items	39.6	39.1	37.1	35.7	37.3
Hired Labor	52.2	48.7	54.0	51.9	53.4
Miscellaneous	41.6	50.0	54.5	55.7	54.3
TOTAL CURRENT FARM OPERATING EXPENSES	200.2	206.4	208.7	212.1	209.6
Depreciation and Other Consumption of Farm Capital	62.2	68.0	71.9	74.6	79.7
Taxes on Farm Property	18.3	13.9	14.8	15.1	15.4
Interest on Farm Mortgage Debt	7.3	8.3	9.7	10.8	8.5
Net Rent to Non-Operator Landlord	.3	.7	.[illegible]	1.0	1.4
TOTAL PRODUCTION EXPENSES	288.2	297.3	305.9	313.7	314.7

GROSS INCOME AND NET INCOME FROM FARMING, MASSACHUSETTS, 1960 - 1984

ITEM	1960	1970	1980	1981	1982	1983	1984
				Million Dollars			
Gross Farm Income:							
Cash Receipts from Farm Marketing	163.9	157.0	304.1	349.4	351.9	367.4	382.9
Government Payment	.7	.6	.7	.8	.6	.7	3.1
Non-Money Income	15.2	15.1	55.5	57.0	64.5	66.1	63.8
Other Farm Income	.7	1.5	7.9	8.6	9.2	9.7	12.2
TOTAL	180.5	174.1	368.2	415.8	426.3	443.8	462.1
Farm Production Expenses	135.6	131.3	288.2	297.3	305.9	313.7	314.7
Net Farm Income Before Inventory Adjustment	44.9	42.8	80.0	118.5	120.4	130.1	147.4
Net Change in Farm Inventory	1.3	.2	2.5	-6.8	-6.8	1.8	2.2
Net Farm Income After Inventory Adjustment	46.2	43.0	82.5	111.7	113.6	132.0	149.6

CROP AND LIVESTOCK PRODUCTION: RANK AMONG STATES, MASSACHUSETTS AND NEW ENGLAND, 1985

ITEM	UNIT	MASSACHUSETTS			NEW ENGLAND		
		PRODUCTION	RANK	%U.S. TOTAL	PRODUCTION	RANK	%U.S. TOTAL
		1,000			1,000		
CROPS:							
Cranberries	barrels	1,680	1	49.0	n/a	n/a	n/a
Apples	42-pounds	2,119	15	1.1	7,738	7	4.1
Peaches, Freestone	48-pounds	44	20	*	n/a	n/a	n/a
Corn for Silage	tons	741	29	.7	4,257	9	4.1
Hay, All	tons	278	44	.2	2,058	26	1.4
Potatoes, Fall	cwt.	825	19	.2	29,101	3	8.3
Tobacco	pounds	781	16	.05	4,096	14	.3
Sweet Corn	cwt.	743	8	4.7	n/a	n/a	n/a
Tomatoes	cwt.	164	17	.6	n/a	n/a	n/a
Maple Syrup	gallons	42	n/a	n/a	669	n/a	n/a
LIVESTOCK AND POULTRY:							
Eggs	each	257,000	37	.4	2,935,000	9	4.3
Milk	pounds	585,000	38	.4	4,682,000	8	3.3
Wool	pounds	71	35	.1	414	29	.5
Sheep	head	3	32	.2	16.5	23	1.0
Lambs	head	5	36	.1	37.9	29	.6
Hogs and Pigs	head	42	40	.1	85.5	34	.1
Cattle	head	13	46	*	156.8	38	.3
Calves	head	31	42	.3	234.5	16	2.2

* Less than .05 percent

FARMS: NUMBER AND LAND, MASSACHUSETTS AND NEW ENGLAND, 1975 - 1986 1/

YEAR	MASSACHUSETTS			NEW ENGLAND		
	NUMBER OF FARMS	AVERAGE SIZE	LAND IN FARMS	NUMBER OF FARMS	AVERAGE SIZE	LAND IN FARMS
		Acres	1,000 Acres		Acres	1,000 Acres
1975	5,800	121	700	26,120	197	5,135
1976	6,300	111	700	27,960	185	5,165
1977	6,200	111	690	28,300	182	5,155
1978	5,900	115	680	28,700	180	5,165
1979	6,200	113	700	29,900	173	5,165
1980	6,200	116	720	30,660	169	5,185
1981	6,100	115	700	30,920	169	5,225
1982	6,100	113	690	30,000	169	5,075
1983	6,100	110	670	30,200	167	5,045
1984	6,100	111	680	29,650	170	5,038
1985	6,000	113	680	28,950	169	4,893
1986	6,000	113	680	28,550	170	4,843

1/ A farm is a place that sells or normally would sell $1,000 of agricultural products.

UNITED STATES: CIVILIAN PER CAPITA CONSUMPTION OF MAJOR FOOD COMMODITIES (RETAIL WEIGHT) 1/, 1977 - 1984

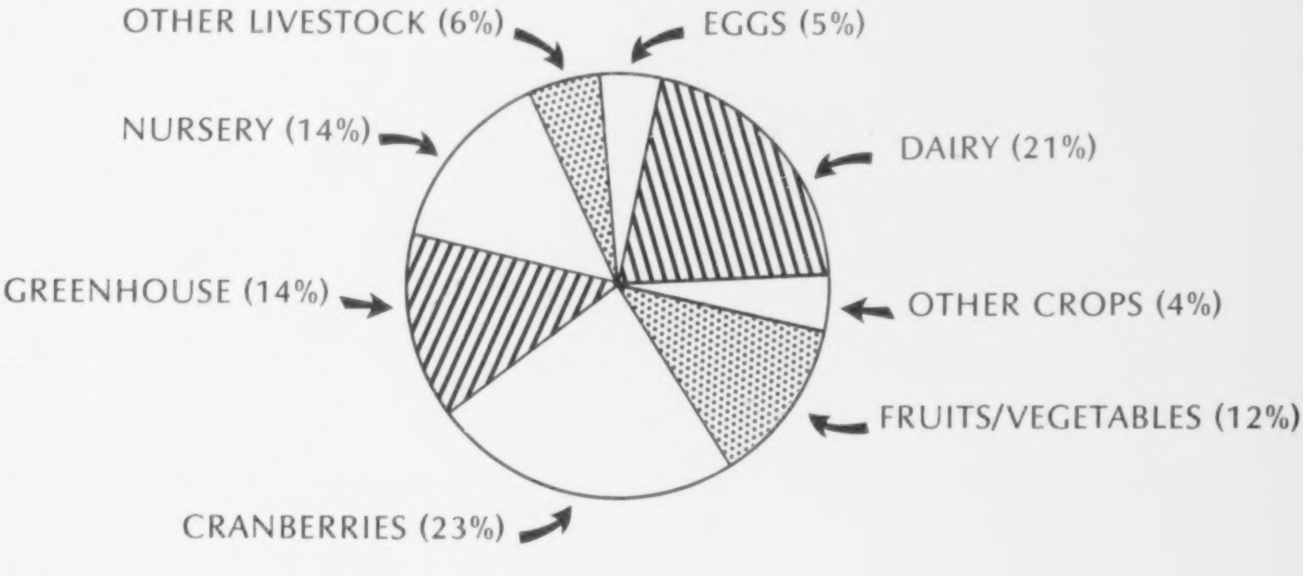
COMMODITY	1977	1978	1979	1980	1981	1982	1983	1984 2/
	Pounds							
MEATS	152.3	146.9	144.8	147.7	145.2	139.3	144.1	143.7
Beef	91.8	87.2	78.0	76.5	77.2	77.2	78.7	78.6
Veal	3.2	2.4	1.7	1.5	1.6	1.6	1.7	1.8
Lamb and Mutton	1.5	1.4	1.3	1.4	1.4	1.5	1.5	1.5
Pork	55.8	55.9	63.8	68.3	65.0	59.0	62.2	61.7
FISH (edible weight)	12.7	13.4	13.0	12.8	12.9	12.3	13.1	13.6
Canned	4.6	5.0	4.8	4.5	4.8	4.3	4.8	5.0
Fresh and Frozen	7.7	8.1	7.8	8.0	7.8	7.7	8.0	8.3
Cured	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.3
POULTRY PRODUCTS								
Eggs	34.0	34.6	35.3	34.6	33.8	33.4	33.1	33.0
Chicken (ready-to-cook)	44.1	46.7	50.6	50.1	51.7	53.1	53.9	55.7
Turkey (ready-to-cook)	9.1	9.2	9.9	10.5	10.7	10.8	11.2	11.4
DAIRY PRODUCTS								
Cheese (excluding cottage)	16.1	17.0	17.2	17.6	18.4	20.1	20.6	21.7
Canned and Bulk Whole Milk	4.3	4.2	4.1	3.8	4.1	4.1	3.9	3.8
Fluid Milk and Cream (product weight)	259.7	257.1	253.0	249.5	245.3	241.7	245.1	244.6
Ice Cream (product weight)	17.5	17.4	17.1	17.3	17.2	17.5	17.9	18.0
FATS AND OILS - TOTAL FAT CONTENT	53.1	54.7	56.1	57.0	57.5	58.4	59.6	58.6
Butter (actual weight)	4.3	4.4	4.5	4.5	4.3	4.6	5.1	5.0
Margarine (actual weight)	11.4	11.2	11.2	11.3	11.2	11.1	10.4	10.4
Lard	2.2	2.2	2.4	2.4	2.5	2.5	1.8	2.1
Shortening	17.2	17.8	18.4	18.2	18.5	18.7	18.5	21.3
Other Edible Fats and Oils	21.0	22.1	22.4	22.7	23.5	23.2	24.8	21.2
FRUITS								
Fresh	79.4	80.5	81.2	86.7	83.9	83.9	87.5	86.6
Citrus	25.3	25.6	23.7	28.1	24.2	23.9	27.7	23.0
Noncitrus	54.2	55.0	57.5	58.6	59.7	60.0	61.5	63.6
Processed:								
Canned Fruit	19.0	17.9	17.8	17.4	16.4	4/ 12.9	4/ 12.9	4/ 8.9
Canned Juice	13.6	16.5	16.9	16.7	19.1	13.7	16.2	n/a
Frozen (including juices)	14.0	12.5	12.6	13.0	12.7	14.1	15.1	13.5
Chilled Citrus Juices	5.7	6.1	5.5	5.9	4.1	3.5	4.1	3.7
Dried	2.5	2.1	2.6	2.4	2.7	2.9	2.9	n/a
VEGETABLES								
Fresh 3/	93.6	94.3	96.5	99.0	95.7	4/ 71.2	4/ 71.0	75.4
Canned (excluding potatoes)	53.1	51.8	53.2	48.5	45.6	45.6	47.1	n/a
Frozen (excluding potatoes)	10.2	10.7	11.2	10.4	11.6	10.7	11.1	12.0
Fresh Potatoes	51.5	48.8	52.1	53.9	46.3	48.1	51.9	n/a
Frozen Potato Products	15.7	17.2	17.7	16.9	18.2	18.1	18.7	17.4
Sweetpotatoes 5/	4.0	3.8	4.1	3.8	3.4	4.4	4.5	n/a
GRAINS								
Wheat Flour 6/	115.5	115.2	117.2	116.9	115.9	119.6	116.1	117.8
Rice	7.5	5.7	9.4	9.4	11.0	11.8	9.8	8.6
OTHER								
Coffee	6.9	7.9	8.5	7.7	7.7	7.5	7.6	7.7
Cocoa	2.6	2.6	2.6	2.6	2.9	3.0	3.3	3.6
Peanuts (shelled)	6.3	6.8	6.8	5.5	6.4	6.7	6.7	6.9
Dry Edible Beans	6.2	4.8	4.7	4.6	5.7	6.0	6.2	n/a
Melons	19.1	19.8	18.9	16.9	18.8	n/a	n/a	n/a
Sugar (refined)	94.2	91.4	89.3	83.7	79.4	73.7	71.0	67.5
Corn Sweeteners 7/	39.8	43.3	47.2	52.7	58.8	63.8	69.4	77.3
Soft Drinks (gallon)	33.3	35.4	36.8	37.8	38.9	39.6	40.0	n/a

1/ Quantity in pounds, retail weight unless otherwise shown. Data on calendar year basis except for dried fruits, fresh citrus fruits, peanuts, dry beans and rice which are on a crop-year basis.
2/ Preliminary.
3/ Commercial production for sale as fresh produce.
4/ Not comparable to previous years due to crop reporting cutbacks.
5/ Table stock and processed.
6/ White, whole wheat, semolina, and durum flour.
7/ Fructose and glucose.
n/a = not available.

CASH RECEIPTS FROM FARM MARKETINGS, MASSACHUSETTS, 1983-1985

COMMODITY	1983	1984	1985	COMMODITY	1983	1984	1985
	1,000 Dollars				1,000 Dollars		
CROPS				LIVESTOCK			
Hay	1,393	3,683	3,580	Cattle and Calves	9,837	6,478	5,583
Tobacco	4,542	3,475	6,582	Hogs and Pigs	4,624	4,416	3,948
Potatoes	3,430	3,820	2,362	Sheep and Lambs	373	552	504
Sweet Corn	10,640	10,339	9,510	Dairy Products	90,852	83,430	81,058
Tomatoes	2,820	4,104	4,428	Chickens	571	643	731
Misc. Vegetables	11,100	11,892	12,156	Eggs	20,020	24,253	20,988
Apples	16,275	16,706	16,925	Turkeys	2,782	2,750	2,777
Peaches	736	720	820	Misc. Poultry	3,475	3,422	3,263
Cranberries	73,465	90,634	91,560	Misc Livestock	4,727	5,049	5,546
Other Berries	2,270	2,550	2,650				
Misc. Fruits	370	390	400	TOTAL LIVESTOCK	137,261	130,993	124,398
Maple	690	886	941				
Forest Products	1,720	1,935	2,235				
Greenhouse/Nursery	100,000	107,500	112,400				
Misc. Crops	3,770	3,690	3,850	ALL COMMODITIES	370,482	393,317	394,797
TOTAL CROPS	233,221	262,324	270,399				

MASSACHUSETTS
1985 Cash Receipts



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